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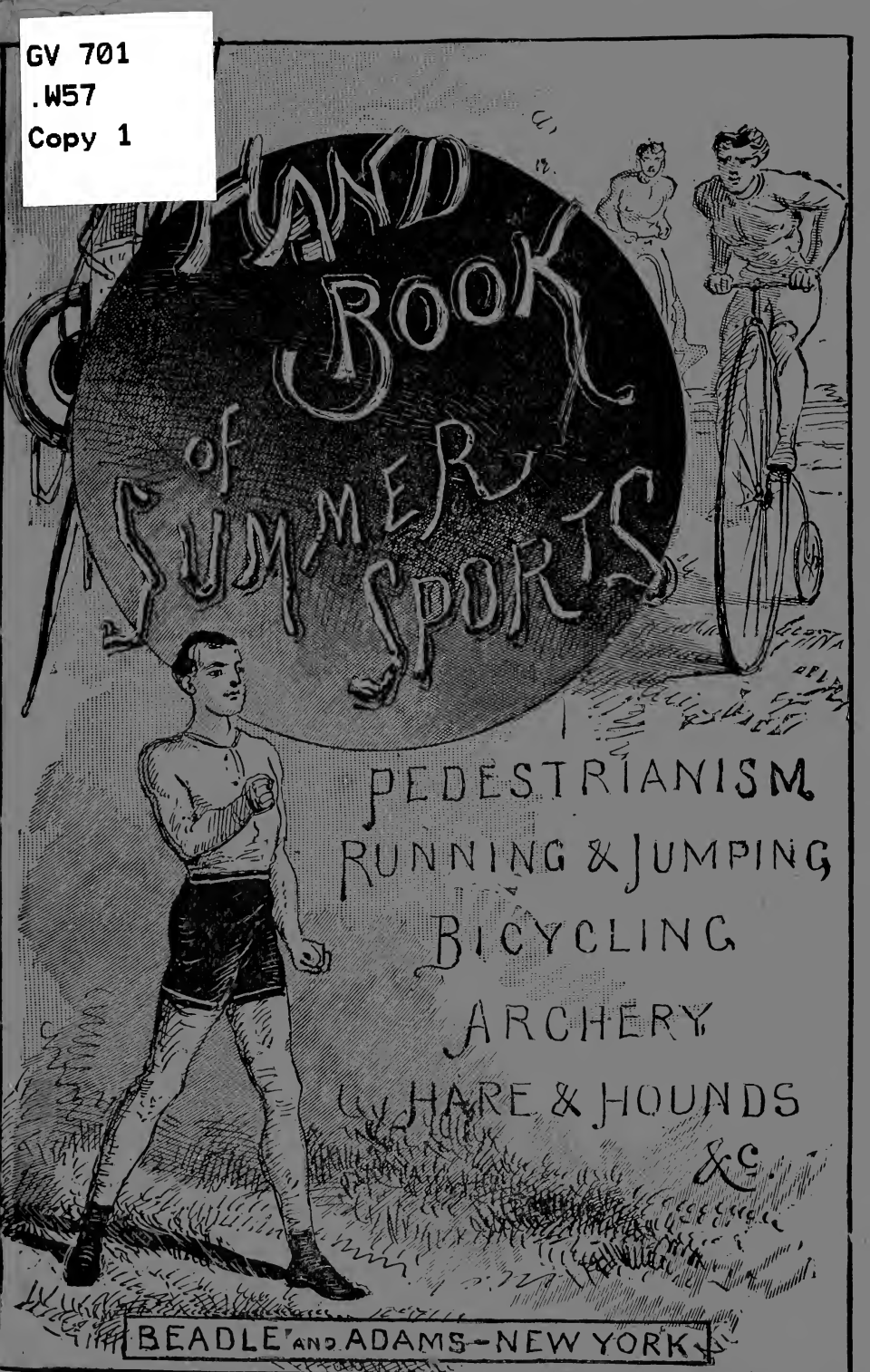

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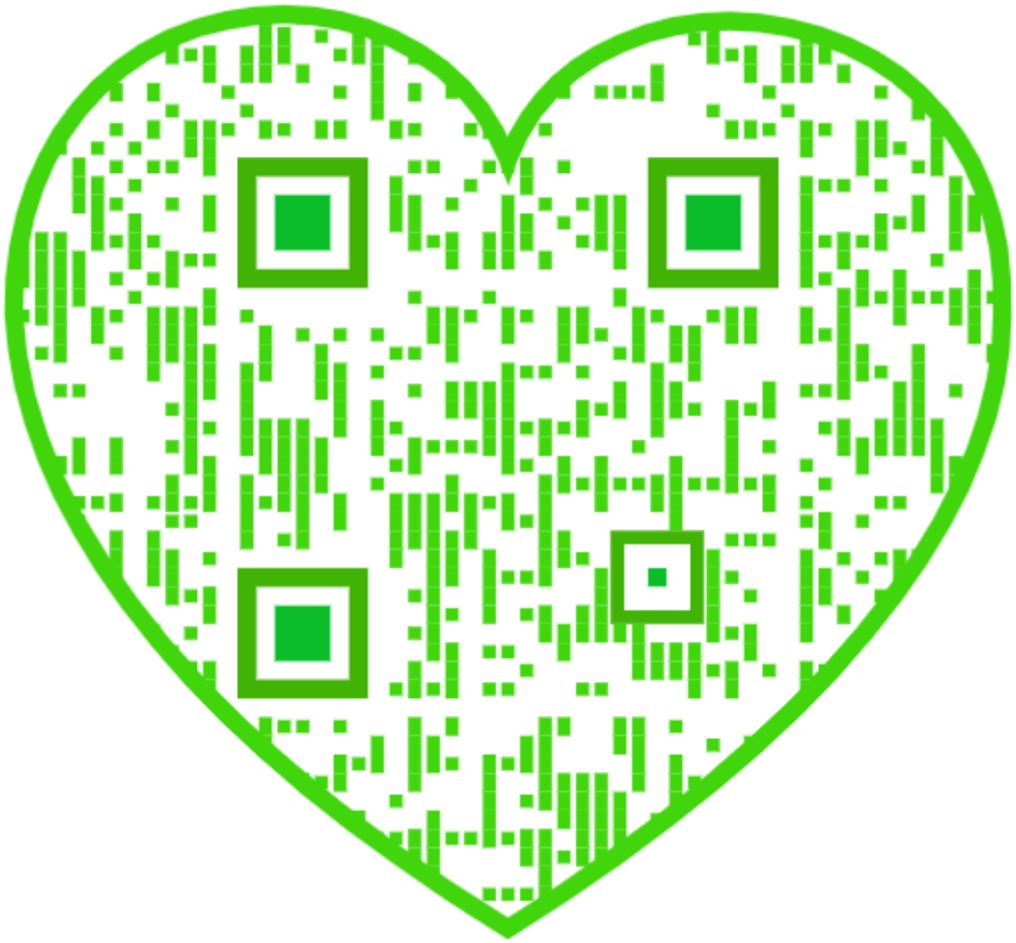

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WITH COMPLETE AMERICAN AND ENGLISH ATHLETIC RULES.

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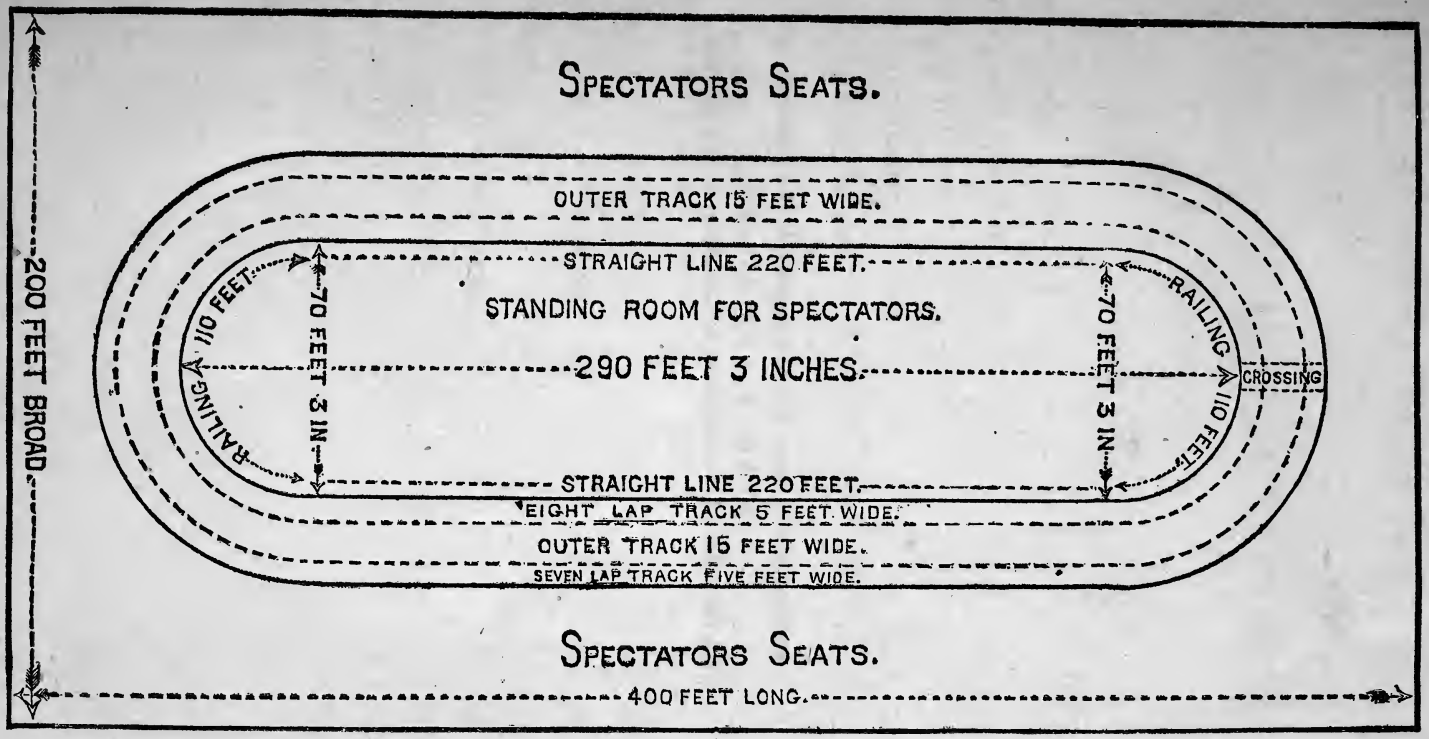

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HANDBOOK

OF

SUMMER ATHLETIC SPORTS.

PEDESTRIANISM.

A wonderful increase of popularity has lately attended the art of walking. The steady improvement made in speed and endurance by professional and amateur walkers and the introduction of international contests have brought this about within a few years.

When the firm of BEADLE AND ADAMS published their first Dime book of Pedestrianism, the only American walker of reputation was Edward Payson Weston. The record of professionals and amateurs had then developed nothing greater than the performances of Captain Barclay of England, who first did a thousand miles in a thousand hours. Weston's famous walk from Portland to Chicago caused the only ripple of excitement in the sporting world on the subject of walking from the time of Barclay up to 1870.

Since that period, things have changed greatly. Weston's achievements have inspired others, and those others have not only equaled but excelled Weston on many occasions. The names of O'Leary, Rowell, Corkey, and "Blower" Brown, all men born in the British Islands, have been recorded above those of Weston at different times; but it remains to the glory of the American pedestrian that in 1879 he beat them all.

All these changes and ups and downs in pedestrianism for the last ten years have made the old books obsolete, and the publishers of the former Dime Book of Pedestrianism have determined to issue a new edition, fully up to the times in all respects.

Besides practical instructions in walking, founded on the different styles of noted professionals, we shall annex much matter never before put in a handbook, concerning the preparation of tracks, measurements, timing and scoring, for the information of that large class of people living in country towns and villages, who have plenty of walkers, but no experience in the conduct of matches, and no opportunity to see how things are done in first class matches.

Every one can walk, but not every one can become a great walker. Any young man of good health and strength can learn to walk five miles in an hour, but the number of men who can walk twenty-five miles in five hours is very small, and will always remain so. If we take the population of any town or village we shall find that out of every hundred young men from eighteen to twenty-five years of age, there are about sixty more or less given to athletic sports, twenty who are very enthusiastic about them, and six or eight who would make *good* walkers, runners and general athletes. Of this six or eight, there is generally one who is better than his fellows, and he becomes the village champion in one sport or another.

This is about the true proportion—one per cent—of the young male community, that is capable of being taken at random and converted into good professional walkers. A general system of early physical training would soon increase this proportion, but as we are never likely to see any such system adopted we must be content with what we can get. Out of those capable of becoming great walkers and striving to become so, the proportion of second rate men is quite large.

There have been great long-distance walkers before, and probably will be again; but a man of the peculiar constitution of Edward Payson Weston is very seldom met with. Other men have, at times, beaten him; but he has outstaid them all at last in endurance. No other athlete on record has remained among contestants of the first-class for so many years, for be it remembered that Weston's career as a walker began on Thanksgiving Day, 1867, the day on which he arrived at Chicago from Portland, and that so late as 1879, twelve years after, he was able to do 550 miles in a week against the best men of England, at a time when his latest rival, O'Leary, had utterly broken down. Ten years after his first appearance on the track, he was able to give O'Leary, in his prime, a tough battle, making 510 miles in six days, and none of his antagonists can say as much for themselves.

The average duration of a great long-distance man, whether walker or runner, seems to be about two years. It was in 1876 that O'Leary came to the top of the wave, and in 1879 he went under. Weston alone keeps on, apparently as fresh at forty as he was at twenty-six.

All this argues in Weston very great physical power and strictly temperate habits, and he possesses both in a remarkable degree.

There, however, the praise ends. As a scientific walker, Weston is inferior, not only to O'Leary, but even pitted against such amateurs as Harry Armstrong, of Harlem, C. Bruce Gillie, of the Scottish-American Club, or a dozen others

we could name. When he was in his best form, about 1874–5, it was the remark of an English trainer, that Weston was "a mystery to him; that he didn't see how he could walk at all on the bad system he used, and that any other man would have broken down utterly in the attempt." Weston used to get through his tasks, and does still, but only at the cost of terrible fatigue, which he might have saved himself on a better system.

O'Leary, on the other hand, is an example of how the best training, constitution and system may be neutralized and overthrown by over-confidence and dissipation. As a scientific walker, O'Leary has no equal, and were he of the same temperate habits as Weston, he might still head the list as world's champion. As it is, the rows of empty champagne bottles that were taken from his tent at Gilmore's, when he broke down in the Rowell match, were the evidence and symbol of his ruin.

It was not in his case, as he said in the *Spirit of the Times*, that "runners can beat walkers." O'Leary, himself, in four or five matches, had beaten all the time ever made by runners, save that of "Blower" Brown; but the O'Leary of those days had succumbed to high living, and a poor excuse was better than none.

Yet, the man's system was, and is, magnificent, and enabled him to do respectable work against Hughes and Campana, when he really was not fit to go at all.

Had he possessed Weston's temperate habits, or had Weston possessed O'Leary's science as a walker, the result would have been a pedestrian wonder that would have lasted many years longer than O'Leary.

WALKERS vs. RUNNERS.

THE success of Weston and O'Leary in their long-distance walks in England surprised the Britons greatly. Up to the time of Weston's appearance in that country, Englishmen had been accustomed to consider themselves the best walkers in the world; but the two Americans—the native and the naturalized—soon took the conceit out of them. The best English long-distance walkers were Peter Crossland and Henry Vaughan, who had both done excellent work in matches of the kind then practiced in England. But the introduction of six-day contests, first started by Weston, put these professionals on unfamiliar ground, and they found that a man who could walk a hundred miles in one day was not able to cope with these American wonders, who could finish five hundred miles in six days. The Englishmen laid their defeat

to the right cause—unfamiliar methods; and Sir John Astley, a rich sporting baronet, to put both parties on an equality, introduced the six-day "go-as-you-please" match, soon to supersede all others. It was thought that runners would have the advantage over walkers in this match. Their backers claimed that by going over the ground faster they would gain more time for rest, and so in the end go further. The first Astley Belt match falsified all their data. In the famous contest at Agricultural Hall, London, from March 18th to March 23d, 1878, Daniel O'Leary covered 520 1-4 miles, in 139 hours 6 minutes 10 seconds, confining himself to walking after the first fifty miles. He had against him the great English long-distance runners and the best long-distance walker, Vaughan, all of whom he defeated decisively. Vaughan stopped at 500 miles—a score he has never since equaled—"Blower" Brown retired at 477, and "Corkey," who had things all his own way for the first three days, broke down utterly on the fourth; while Hazael and Rowell were earlier satisfied that they had no chance.

In the same year O'Leary defeated with ease John Hughes and Peter Napoleon Campana, surnamed "Sport," both runners, and seemed to be secure of holding the Astley belt for life. Indeed, had he not, like most sporting men, been deceived by the exaggerated reports of Campana's prowess, he might be champion to-day.

The reason for this statement is simple. Campana's Bridgeport record, as it turned out from after investigation, was a deliberate fraud, got up by some low sporting men, who probably did not at first dare to hope for the success which it attained. They began by running their man on a short track, and when that fraud was discovered made a merit of having the course publicly remeasured by the city surveyor. The more important part of the fraud was not discovered till after "Sport's" ignominious defeat by O'Leary, and then only by the confession of his Bridgeport scorers and time-keepers. It turned out that they had been crediting him with laps never run, and that they had employed men to personate him, late at nights, when he was really asleep, these men running for him. By means of these fraudulent representations they rolled up such a score for Campana that he was credited with 521 miles in a six-day match.

O'Leary, who, besides his Hughes match, had been giving several 400-mile walks, knew that he was no longer in condition to walk against a good man for the championship, and therefore made the match one for money alone. Had he allowed the belt to be in the stakes there is no doubt that he would have won it for the third and last time, when he would have become its absolute possessor.

In the meantime, however, the runners in England had been

improving their style immensely, for in the second Astley match, beginning Oct. 28th, and closing Nov. 2d, 1878, William Gentleman, (*alias* "Corkey,") made 520 2-7 miles in 137 hours, 58 min., 20 sec.; thus beating O'Leary's distance by a trifle, and his time by more than an hour. This match it was that raised the spirits of Sir John Astley, and induced him to send over Rowell (who made 470 miles in the same match) to beat O'Leary. Sir John knew what he was about, and had kept O'Leary in view all the year.

The scores of the American champion's matches with Hughes and Campana, showed that the man was failing, and if so, Rowell was good enough to beat him, as there was no other really formidable walker in America; so Astley judged, and correctly, too.

The victory of Rowell over the American walkers caused an instantaneous revulsion of public sentiment in favor of runners, a revulsion artfully increased by O'Leary's widely-published dictum that the runners were always "bound to beat the walkers." This, however, was not by any means proven at that time. The real truth was that champagne, not Rowell, beat O'Leary; and Rowell's record in the race was twenty miles short of the champion's best walking record. The other competitors in the match were simply not first-class men.

The cause of the runners has, however, received a fresh impetus since Rowell's victory by the still more remarkable feat of "Blower" Brown (always a "good man") who in the third Astley belt match, April 22d-27th, 1879, made the amazing distance of 542 miles in 140 hours.

Finally the veteran Weston beat even Brown's record by the superlative score of 550 miles over the same track, opposed to Brown himself and Hazael.

Since that time Brown has made 553 miles over the same track, and a negro lawyer from Boston named Hart has made 565 miles in Madison Square Garden, finishing April 10, 1880.

As the record now stands, in contests where almost superhuman endurance and speed are required, ordinary runners may win, but only at the expense of a waste of physical energy that a scientific walker does not suffer. They go faster and manage to live through the contest, but that is all. The introduction of "go-as-you-please" contests, has, however, given rise to a new style of long-distance running, which is as strictly scientific as professional walking, and to these two branches of pedestrianism let us now devote our attention.

SCIENTIFIC WALKING.

Every one walks more or less, but very few understand the principles of scientific walking. The science consists in two things: 1st. How to acquire the longest stride practicable to the physique of the walker; 2d. How to distribute the weight of the body so that the greatest effort shall be made with the least possible exertion.

Many walkers acquire the first part of this science, and some understand the second division of the subject, but very few can combine the two, like O'Leary. For short-distance matches, in which contests up to twenty-five miles are in-

THE UNSKILLED WALKER.

cluded, the number of scientific walkers is reasonably large, both among professionals and so-called amateurs. They almost all walk on a correct system, similar to that of O'Leary, but inasmuch as their exertions do not last so long a time, they can afford to make them more vigorous. If their stride be no longer, proportionately, than that of O'Leary, the number of steps per minute taken by them is greater, and they cover the ground at a rate that no untrained person can equal without breaking into a trot.

The rate at which the best of them can go is shown by the marvelous feats of Perkins, the English champion, who has the record of a mile walked in *six minutes and twenty-three*

seconds, and eight miles walked in *an hour*, *less fifty-five seconds*. Such performances show that Perkins can out-walk any ordinary road-horse going on a trot. Even an amateur of our own country—T. H. Armstrong—has walked seven miles in fifty-six minutes. It is needless to say that no untrained person could equal this, four miles an hour being very sharp walking to most people; and it becomes a matter of interest to know how the professionals do it, and how their walk differs from that of an unskilled man.

The sight of a walking-match does a good deal toward ex-

THE PROFESSIONAL.

plaining the mystery, and the foregoing cuts will show the main points of difference between the skilled and unskilled pedestrian.

The unskilled amateur, who sets out to walk fast, generally makes several grave mistakes. He leans his body forward, bends his back, lowers his head, swings his arms at full length, and allows his knees to bend. The consequence is that when he is doing his very best his attitude is very much like that in the first cut, depicting the unskilled walker.

There is no question that the poor fellow is doing his best,

and very little doubt that he can not last long at the rate he is going.

Contrast with this figure that of the second cut, showing a professional in full stride. You are at full liberty to laugh at the figure, for there is no question that it has strong elements of the ludicrous; but for all that it is not exaggerated, and such attitudes may be seen in every fast short-distance match.

Now it is time to note the points of difference between the two men and to show where the professional has the advantage over the other.

First note that a perpendicular line dropped from the center of each man's chest between the shoulders to the ground, and continued upward through his head would represent the line in which his weight falls. Draw such a line and you will find that in the case of the unskilled walker it strikes the ground close to his forward heel, while his head is in advance of it. Consequently he has to support the weight of his head, with all the disadvantage of leverage, by muscular exertion, and the strain must fall on his back.

In the professional, on the other hand, the weight falls on a nearly perpendicular column through the body, which is in balance, striking the ground midway between the points of support—the feet. If the man were to stop just where he is, he is in a position to resist a shove either forward or back. A smart push from behind would infallibly send our unskilled friend on his nose.

Note also that the professional's body, if anything, inclines backward, and think of the reason. Remember that when in rapid motion there is always a strong tendency to fall forward with the upper part of the body, a consequence of its weight and momentum. The balance of the body can therefore be sent a little back of the line which would be proper when standing still, to counteract the force of this momentum.

So much for distribution of weight.

Next note that the professional has both legs straight, and can therefore take a greater stride than any one with bent knees. Note, moreover, that he plants his heel first at the very extremity of his stride, and thus gains on every step the whole length of his foot, for after the heel is planted the toe comes down in advance by its own weight without labor. If he were to point his toe downward, as in the military "goose-step," he would lose all this advantage as soon as the foot was planted.

Our next remark is that whereas the tyro swings his arms full length with open hands the professional clenches his fists and bends his arms double.

With this same action of the arms comes another of the shoulders, which is of great importance. The working of the shoulders in fast walking is a natural and almost ineradi-

cable habit. A fast walker *will* swing his arms, no matter how he is cautioned. We have seen many a drill master driven to despair by the swinging of arms of a marching squad, after all his cautions. The fact is, the swing is right and the drill-master wrong. The faster a man walks, the more his shoulders swing, by an effort of nature to lift the weight of his body from the rear foot and to let it down on the front heel as lightly as possible. The usual way of accomplishing this result is to swing the arm at full length, but this fatigues the walker in two ways: first, by the resistance of the air to the arm, cutting it; second, by the leverage of the hand at the end of the arm, which has to be counteracted by the shoulder muscles. Both these effects are obviated by the simple expedient of bending the arm in proportion to the speed, and clenching the hand. When at top speed, the forearm of the advanced shoulder should be perpendicular, that of the rear shoulder horizontal, and as the speed decreases so should the angle of the arms become less acute. The difference in speed and ease of movement between a walker who holds up his arms and one who lets them swing full length is very striking, and our readers can try for themselves the experiment of walking in both ways, noting the advantage given by holding up the arms. In a race, it is a point that soon tells.

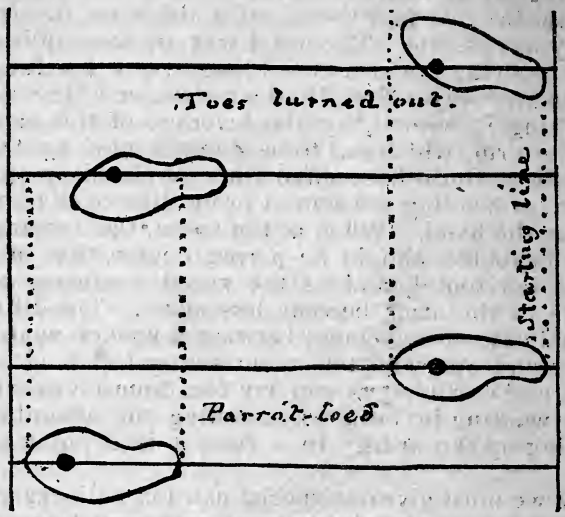
Lastly we must give one special caution with regard to taking the cut for an exactly accurate representation of what a man should do in order to become a fast walker. As the artist has finished the figure, many people might imagine that he had just made a *spring from the toes of the left foot*, which is in rear. This should not be done, as any weight sent on the toes soon tires out the walker, and although the foot is bent as in the cut, the weight is taken off the toes by working the shoulders. In fact as an English writer has well said, modern professional walking is a series of springs from heel to heel.

There are some other points in scientific walking which require the assistance of diagrams to explain them, and these concern the position of the feet best calculated to secure a long stride at the least expense of physical exertion.

If there is anything in scientific walking that is puzzling to a civilized beginner, it is the things taught him in childhood which he is now compelled to unlearn. A young savage who has never had any lessons in "deportment," walks correctly enough, though he does not generally care to exert himself sufficiently to make good time at that pace, preferring the "dog-trot." But so far as he walks, he always walks correctly, with a hollow back, stepping from heel to heel, his arms bent, his head thrown back, his toes turned in. The civilized boy, on the other hand, has a bad lesson given to him as soon as he can talk. He is told to "turn his toes out."

Now it so happens that if you take two men, equally good walkers, and let one turn his toes out, the other in, the "parrot-toed" man is sure to beat the other in the long run.

The reason for this statement will be made plain by looking at the following cut and reflecting on a few facts in connection therewith.



TWO METHODS OF WALKING.

In the upper figure we have the foot-tracks of a man walking with his toes turned out; in the lower one the same foot takes the same stride "parrot-toed." Note that both start with heels on the same line, and that before a step is taken, the man who turns out his toes has lost nearly an inch of forward progress, his toes not touching the same line as that reached by the other, who carries his feet straight. With the close of the first step the difference increases, *both parties taking the same stride, measured from toe to toe.* The parrot-toed man sets his heel down in advance of the other's heel, and gains a further advantage by the greater reach of his toe at every step.

The gain of the parrot-toed man is thus shown to be constant when both parties use the same exertion, and must always give him the race, other things being equal.

But there is another loss in turning the toes out, which is not less important, and which is shown by the position of the large black spots in the cut. These spots represent the point on which the weight of the body falls in the middle of each stride, and a very important difference will be noted in their position. In the case of the man who turns his toes out, this spot comes under the joint of the great toe, while in the other foot it lies between the second and third toes.

In other words, when as man turn out his toes he places *all his weight on a single joint;* when he walks parrot-toed it is *distributed among five joints.* This difference in strain is sure to tell in a long race. It is the experience of many a tramp in moccasins and bare feet that makes the Indians and other wild tribes walk parrot-toed, because any other way would soon lame them. Our civilized stiff-soled boots, by distributing the weight of the body over a large surface, permit us to go on walking in a vicious fashion, as long as we do not have to use much exertion, but when we come to serious pedestrianism, we must return to savage *i. e.* natural ways, or the strain will tell in lameness, inside of twenty-four hours' work.

The celebrated Indian-painter, George Catlin, gives in his "Travels" a striking instance of the difference of the two systems. He was a large, powerful man, and counted himself a good walker in the old times. Therefore, when, in company with a number of trappers, fur-traders and Indian employes of the Fur Company, he set out for a hundred-and-fifty-mile tramp over the prairie in moccasins, he made up his mind to lead the caravan and outwalk every one.

For the first day he did so, but then found himself lame; and next day, in spite of all he could do, he fell behind inferior men and became a straggler. At the evening camp-fire, the second day, an old trapper noticed his condition and told him the secret of his non-success.

"You are walking in moccasins," said the hunter, "and you must learn *to turn in your toes, as the Indians do.*"

Catlin took the advice, went to the head of the line next day, and had no more trouble in keeping his place.

The moral of the story is obvious. If you wish to last to the end of a match, *turn your toes in.*

SCIENTIFIC RUNNING.

If there is anything which the records of modern pedestrianism settles, it is that we have yet a good deal to learn from savages. Here we have been walking matches and running other matches for the last fifty years, only to settle down into the regular Indian lope, or dog-trot, for long distance traveling, as faster and less exhausting than the fastest walk.

This pace, introduced for the first time into civilized contests by "Blower" Brown, Hazael, Corkey and Rowell, is the very same which the Indian runners of the forest tribes have used from time immemorial. It is the same with which the Hindoo palkee-bearers swing through the jungle for mile after mile under a tropic sun without apparent distress, and the universal method adopted by savage and semi barbarous people whenever they wish to journey fast on foot. The civil-

ized untrained man when he tries the same pace commonly makes a mess of it. "Old Sport," *alias* Campana, was a good exemplar of the civilized idea of a dog-trot—that of the old volunteer fire-brigade of New York city. It was a fair trot, but it would not last forever. Campana put up both arms, working his shoulders as in a walk, and lifted his feet high before and behind, with a weary-looking, lagging step. It entailed about the same exertion as a fast walk and got over the ground no faster. Too much work was *wasted in perpendicular motion.*

LONG-DISTANCE RUNNER.

A model of truly scientific long-distance running is found in little Charley Rowell, whose style is an exact imitation of Brown, Corkey and Hazael. All four are men of about the same size and weight, standing five feet six inches, and weighing from 130 to 140 lbs. The probable reason for their taking to running was their small size, which debarred them from success as walkers against men with six inches more stride. As runners they have all glided into the same system, which is fairly represented in the cut above, taken from the attitude of Rowell.

The first thing that one notices about this figure is its ease, and the absence of all appearance of effort. The professional walker, in the cut in preceding chapter, looks as if he was walking hard, but this fellow seems trying to run as slow as he can. The fact is that, while not actually trying to go *slow*, he is trying to *save himself* as much exertion as is compatible with getting over the ground a little faster than the fastest walk. Such a pace is from six to eight miles an hour, and such a pace can be maintained by a well-trained man like Rowell after he is unable to walk over three miles an hour.

There are several points to notice about the attitude, especially the position of the head and the way the nose is elevated in the air. When Rowell started after O'Leary on his dog-trot with his nose in the air, people laughed at him and thought he was playing monkey tricks; but when Rowell kept his nose in the air for six days it began to be seen that he had a reason for so doing.

If any of our readers will try the experiment of running for a distance with the head down and then change to Rowell's plan, nose in air and teeth tightly clenched, they will be surprised at the difference in ease of respiration. Throwing up the head makes the passage from nose to windpipe nearly straight, and the air has no corners to turn before reaching the lungs. In fast running, or any long-continued exertion, it is necessary to keep the mouth closed, to prevent the rapid evaporation that takes place when the air comes in through the open mouth, parching up the throat. But if we try to breathe *through the nose alone*, with the head bent down, we find that the air does not come freely enough, and distress soon compels us to open the mouth, after which we are speedily at the end of our tether—and wind. Holding up the head in the fashion depicted in the cut renders a two hours' run a matter of comparative ease to a well-trained man, and enables one like Hazael to run his 137 miles in 26 hours.

The next point to notice about our long-distance friend is the position of his arms, which are slightly bent and held rigid by the sides, to steady the walls of the lungs and thus let the chest be kept fully dilated as long as possible. If the man in the cut were running a "sprint race"—that is for any distance inside of a furlong—his arms would go up to the same angles as those of the professional walker, because then he would be at top speed. As it is he is going *as easily as he can*, and does not run fast enough to be able to keep his arms up, *without a conscious muscular exertion, which would tell in a race.*

The art of long-distance running is one of real value to any one who wishes to increase the size of his legs to shapeliness, and to be able to go long steps rapidly with the least fatigue. This pace, alternated with walking whenever the breath fails, can be adopted by any person with advantage to health. The

strain comes on the muscles of the front of the thigh and calf of the leg, and a return to walking rests these more completely than actual standing still. The combination of the two forms the "go-as-you-please" contest.

We have thus fully noticed long-distance running before treating of "sprint" races and other short dashes, because it is a more important branch of athletics. The correct system is one that can be readily acquired by all, old and young, and

SPRINT RUNNER.

will be found of great value whenever one is in a hurry to go to a certain place. The regular long-distance trot will take a person further and faster than any other known method of unaided progression.

A few words about sprint running will appropriately close this chapter.

By the term "sprint" races are meant all those dashes at full speed which are not over a furlong in length. Seventy-five and one-hundred-yard dashes are the most common, and the question of excellence as a sprint racer, or "sprinter," de-

pends on single seconds or fractions thereof in time, while the benefits derived from the practice are nothing like those of the mile or ten-mile runner. The form required, however, merits observation.

Sprint running is only an exaggeration of the system displayed in long-distance work. The arms rise as in fast walking, and for the same reasons, till they are doubled up. The work, being fast, requires that the lungs be kept expanded, therefore the arms are kept stiff and rigid to aid the chest muscles in holding out the walls of the throax to give room to the lungs. The distribution of weight, on account of the rapid motion, comes to be much the same as in fast walking, but the knees are bent of necessity; because in running the progression is made by springs from toe to toe, instead of heel to heel. The same cause admits of the upper part of the body falling forward, though the elevation of nose and hollowing of back is even more important than in long-distance work, inasmuch as the exertion is more severe while it lasts. The cut on preceding page will illustrate the difference between the sprint runner and the long-distance man.

Having thus treated of scientific walking and running simply with regard to their mechanical action, we can next turn to the subject of the proper dress to be adopted to make both easy for the pedestrian.

DRESS FOR PEDESTRIANS.

The first question of importance both to walkers and runners is how they shall be shod, and too much attention cannot be paid to this matter. We will begin with the needs of a walker.

It is not our intention to advertise any particular firm of shoemakers as unequaled in the manufacture of walking-shoes; for the fact is that the very best of the crack firms will turn out botch jobs if you do not watch them sharply.

There are four points to be attended to in the selection of walking-shoes:—First, the sole of the shoe must be *under the whole of the foot;* second, the uppers must be soft and flexible; third, the fit must be snug around the ankle and heel, but easy at the toes; fourth, the heels must be low and broad.

To secure the first of these points there is only one certain way, which is to stand in stocking feet on a piece of paper, and have the outline of your sole traced on the paper, the actual sole of the shoe being cut to this pattern, and never coming inside of the line.

The second and third points depend on your own vigilance and determination not to let the maker put off a stiff, ill-fit-

ting pair of shoes on you. As for the last point, low broad heels, no heels at all would be better. Very low heels of India rubber would, however, diminish the jar of fast walking, and are worth more trial than they have yet had.

The only reason for having a heel on a walking-shoe is to enable it to resist the unequal wear that comes on that spot, and not to elevate the heel of the natural foot.

With regard to the first point, that of the sole being under the whole of the foot, this cannot be too much insisted on, for shoemakers *will* make them narrower, with the idea of giving an appearance of smallness to the feet. Your only remedy is to refuse to take all shoes where the maker does not follow exactly the paper pattern of sole.

The softness and flexibility of the uppers are more easily secured, as also the fit round the ankle, where walking-shoes should be *laced*. Buttoned boots or "Congress gaiters" with elastic sides are not fit to walk in, as neither can be accommodated to the size of a foot that is swelling during a severe match. Laces can be relaxed or tightened; buttons are inflexible; while elastic webbing always keeps the same pressure.

A professional walker, or one who is ambitious of excelling on the track will need six pairs of shoes in a long race, beginning with those that fit close and changing to those that are old, worn, and easy to the foot, as it becomes sore and inflamed. The man who rests his hopes of fame on mile-walks, needs a different foot-gear, analogous to that of the sprint runner, whom he resembles. Strong shoes are thrown away on him. He needs the very lightest kind of slipper that can be made, consistent with enough leather to preserve the foot from bruises, and the running slippers that are sold in all sporting warehouses are just the thing for this kind of work. Those that are furnished with spikes are well enough for running on turf, but to be avoided on hard tracks.

Next after the shoes, and equally great in importance, come the socks. There is only one point necessary to be observed about these: they should be of soft woolen and as thick as possible. Hand-knit are preferable to woven socks, but the thickness and softness are the great points, as these secure the absorption of the perspiration. Cotton socks would be sure to work into hard wrinkles in a match-walk and cause severe blisters, though it must be owned that these will sometimes occur in spite of all imaginable precautions.

About the rest of a pedestrian's dress there is but little to say; as it depends almost entirely on individual fancy. There is no doubt that the best dress for active work of all kinds is a suit of common white cotton tights, which cost less than two dollars, while trunk-breeches can be made at home at an almost nominal cost.

But whether the walker rejoice in silk tights and velvet trunks, or remain satisfied with the homely flannel drawers and cardigan jackets of Rowell, is a matter of indifference to his speed. The only things he CANNOT wear if he hopes to do good walking, are ulster overcoats and trowsers. In a word, his dress may be anything he likes, so long as it leaves his joints free; and this is why knee-breeches have never given way to trowsers on a walking-track.

Trowsers are in fact the worst dress possible for all active exercise. They cramp the knee and prevent its free action in a manner which, while it does not interfere materially with walking at ordinary rates of speed, affects a runner seriously by the time he has passed over a few yards at top speed.

TRAINING FOR A MATCH.

THE word "training" in modern times has come to comprise two separate branches of athletic science. The first is a system of practice on a special feat till the trained man accomplishes it with ease and certainty; the other and more important branch aims to bring the trained man to the highest pitch of health and strength.

When he has attained this point he is said to be in "condition."

It is plain therefore that a perfect system of training cannot afford to leave out either of these branches. A man may be trained to walk or run in the best possible style and fail in a race on account of poor condition; or again he may be in the finest physical condition and fail on account of defective system of walking or running.

The many races of the late champion Daniel O'Leary illustrate both these facts very sensibly. When he went to England to meet Weston and the great pedestrians, he kept himself in good condition, and used the best system of walking known. The consequence was that he was prepared at all points and beat all comers. When he came back to the United States he was pitted successively against Hughes and Campana, men whom he despised as opponents. Hughes was in excellent condition, but did not understand the science of either walking or running; and so tired himself out early in the race, which was easily won by O'Leary on a small record.

Next the champion met Campana, a man who began to run too late in life, and who then understood nothing but the jog trot for a day or two. As a walker he was nowhere, his sys-

tem being so bad that he tired himself out when going at only four miles an hour. Here also O'Leary had an easy victory; but it is worthy of remark that he was more distressed to do four hundred miles in the Campana match; than he had been to accomplish five hundred and twenty in the first Astley belt match.

The whole reason was that he had allowed himself to get out of condition, and so found his system feverish when it should have been vigorous; while blisters that should have yielded to care rapidly increased in size and made the greater part of the walk a positive torture to him. It became evident that if he were to be pitted against a man in good condition with a good system, he would go under, and the next race realized the expectation. Coming against Rowell, Harriman and Ennis, all in fair condition, he broke down utterly and left the track for good.

Rowell, the winner of the match, is an example of the success which is sure to meet a man who combines perfect system and perfect condition. His opponents, Harriman and Ennis, while not in bad condition, were not models in that way. Harriman was too much of a vegetarian, and Ennis was always cursed with a rebellious stomach. The little Englishman on the other hand was in perfect condition and used a system of progression that exactly suited him. His short legs made a long walking stride impossible; therefore he took to trotting; but by dint of long practice acquired a trot which he could keep up for hours at a time, with no more fatigue than that involved in fast walking, while it covered more ground.

Later matches have but emphasized these points. The records of distance made in six-day contests have gradually risen, as man after man has acquired a better system of traveling, while all have kept themselves in better condition; and thus we see men who began like Merritt, Krohme, Hart, Panchot, Fitzgerald and a dozen others, gradually bettering their performances, till the American track has fairly beaten the English in the number of "five hundred mile men" it has turned out.

One thing has been demonstrated in all these races beyond a doubt; which is, that no man can safely train *himself* for a great feat. He may do it during preliminary practice and at small matches where his opponents are not dangerous; but when it comes to a supreme effort, he must put himself into the hands of others, if he hope to make a good record.

The men who do the training for matches in large cities are generally retired pugilists or professional athletes of other kinds and there's not much choice between them. The special work of the old pugilistic trainer is to bring his man up to the highest point of health and strength, besides sustain-

ing him during the match. He is generally a careful and experienced nurse, who understands the efficacy of rubbings and baths to take the pain out of tired joints; and will often perform wonders in the way of restoring a jaded man to comparative freshness.

His weakness as a special trainer for pedestrians, lies in the fact that he is not an expert in systems of walking, and so cannot give his man much valuable instruction during his training.

The weakness of a professional pedestrian, on the other hand, lies in the direction where the pugilist is strongest, that of general physical training. His best point will probably be his ability to criticise and improve the style of his pupil before the match. If such a trainer can make his man go more miles in an hour with less fatigue than he has ever done before, he will be worth a good deal of money; but as a sustainer and imparter of strength he is not always as successful. He is apt to let his man eat things that are not only not beneficial, but often positively injurious; a mistake which the pugilistic trainer never commits.

These facts render the selection of trainers a matter requiring a good deal of judgment, and indicates different men for different kinds of races.

If the object of ambition is to beat the world in a mile, five-mile or twenty-five mile walk, square heel and toe, a professional pedestrian is the man to employ as a trainer; as style and swiftness are his special points, and the efforts required in short contests are not so severe as to cause an exhausting drain on the physical powers.

When the trial is changed to a sprint race, where great speed is required and a severe temporary strain comes on heart and lungs, the pugilist would answer the purpose better, as condition is the great point in such a match, style being secondary.

For longer running contests up to twenty miles, where economy of strength is everything, style becomes a valuable adjunct; and here the professional runner is indicated as the proper trainer.

For twenty-four-hour walks and runs the professional pedestrian is also the man to employ, as such efforts are not above the capacity of men in fair condition.

Even as far as three-day contests, a moderate amount of physical condition will take a man through without breaking down under the strain, and a pugilistic trainer may be unnecessary.

When it comes, however, to the supreme efforts required to accomplish five hundred miles in six days, two trainers are almost imperatively required; one a pedestrian, to train for speed and style; the other an old pugilist, who understands

every point involved in putting a man into first-class condition and nursing him under the tremendous strain involved in a match. These men must be in constant attendance on their pupil before the match, and will be obliged to lose as much sleep as the competitor during the trial itself, unless they can be relieved by others as good as themselves.

We have said this much on the subject of training, although experience shows that trainers are not made by books. We recommend every reader, ambitious to become a crack pedestrian, to put himself into the hands of an old trainer whenever he can, paying his price if he can afford it. If, however, this be impossible, and it be absolutely necessary for the aspirant to train himself, a few safe general rules may be laid down, which can be followed without danger, and the observance of which is sure to give an easy victory over *untrained* men, such as attend country matches.

We will take them in order, beginning with sprint-racing.

HOW TO TRAIN FOR A SPRINT RACE.

If it be for a seventy-five-yard dash, find some place where you can lay out a straight track, just that length. In the country this is easy, in the city more difficult, the public parks being the only places where it is practicable. Having laid out the track, take a friend to time you, and run the course regularly three or four times a day, one or two trials each time, keeping a record of the average for a week. Do this in your ordinary clothes and shoes. You will probably find your first week's average about eleven seconds, if not more.

During this first week there is no special diet to recommend, save to eat as few vegetables, and as little sweet stuff as may be. If the bowels become free, as they are apt to do under the running exercise, no medicine need be taken, but if the system is much clogged, a succession of three doses of epsom salts or citrate of magnesia, taken every other morning, will remove waste matter and restore a healthy tone.

The second week begin to run for time, and to improve the wind. Increase the number of dashes to five or six a day, and run the course at least twice each trial. You are pretty sure now to get your record below ten seconds, if you throw off your upper clothes and run in shirt and trowsers. During this week eat lean meat, mutton or beef, with stale bread, and drink as little as possible. Remember that to keep the bowels regular, there is nothing like regular habits; and that the system should be cleared out twice a day.

On the third week try the track at top speed, once every hour, and begin to practice in running costume. You will find that your record has now come down below nine seconds. Your appetite will become furious during this week, and you

will find it hard to stick to your temperate fare of bread and meat, but this is essential to success, as a sprint runner can hardly be too thin and hard for his work. If the aspirant be at all fat, he should run in heavy clothes to sweat himself down, or else try a Turkish bath, which takes off the fat quicker than anything else.

The fourth week should be that of the race, and the previous exercise should be increased by running the track once every half hour in the morning, and returning to the previous week's practice in the afternoon.

If any young man out in the country will try this method of training faithfully, beginning four weeks before the match comes off, he will be able to beat all his untrained competitors by one and perhaps two seconds; for sprint running depends on the capacity to take the greatest possible number of steps inside of twenty seconds, and so does not require the elaborate training necessary to accomplish more exhausting feats.

Hundred-yard dashes require the same training as seventy-five-yard spurts; and so do hundred-and-twenty-yard races. The longest sprint race, and the most severe of all, is the furlong dash—two hundred and twenty yards. This kind of racing is a tremendous strain on the lungs and heart, as the same pace which carries the runner over the hundred yard track has to be kept up and even increased. It requires a broad deep chest in the runner, with little flesh, and that hard and firm. To train for such a race requires at least a year's practice, and amateurs would do well to leave it alone altogether.

TO TRAIN FOR MILE OR TWO-MILE WALKS.

Here the first requisite is a track for practice, and the directions for sprinter's training will serve in all respects as to diet and medicine. The period of training however needs to be longer, the mile walker needing more time to perfect his style and speed. The margin of difference between a green sprinter and a trained one is only a few seconds, but the green walker has to overcome a difference of several minutes before he can hope for success in a mile match. His exercise has one great advantage about it, that it aids him to train himself into first class condition. If he will study to acquire the walk of the professional, described in previous chapters, he will be able in six weeks to cut down his mile record from twelve minutes to less than nine, and will have a fair chance in any amateur race. When he can do a mile in eight minutes, he can enter with a fair degree of confidence almost anywhere, and can travel round to country races carrying all before him.

TRAINING FOR MILE RUNS.

Here the training should be long and severe, and no amateur can hope to do very much in mile runs in the way of time. It is true that there are some young men, calling themselves amateurs, that have made fine records at mile runs, but they were in reality professionals; that is, they made a business of running, even if they did not take money prizes. Begin with sprint racing if you hope to become eminent as a mile runner, and keep on extending the length of your trials gradually. It takes a good year's hard work to make a respectable mile-runner.

TRAINING FOR LONG RUNS.

Here it is difficult, if not impossible, to give any fixed rules beyond those indicated at the earlier part of this chapter. The best way is to get a good trainer, put yourself in his hands and follow his instructions faithfully.

LAYING OUT A TRACK.

NOTHING is so common a cause of spoiling a walking or running record as "a short track." This is peculiarly the case in the country, where pedestrian contests are apt to be conducted in a rough manner, unaccompanied by the guards found to be essential in the first-class matches held in large cities. Too much care cannot be exercised in measuring a track; and it is always best to secure the services of the official engineer of the county or town as a measurer to make sure of the proper length. The reason for securing an engineer rather than trusting to your own measurement is that engineers can always be depended on to use *standard measures, made of metal, which do not stretch.* Common measuring tapes, being made of woven materials or leather, are liable to many errors from stretching or shrinking; and though these may not amount to more than a few inches in a fifty-foot tape, they make a serious hole in a record of five hundred miles.

Sometimes these mistakes will occur in the best regulated contests, as became evident after the Astley belt match of 1879 in Gilmore's Garden. There was a great deal of litigation and dispute between the representatives of the Astley and O'Leary parties before this match came off; and the O'Leary people, who took possession of the Garden the week after the match, in their eagerness to find some fault with their

predecessors, had the track remeasured. The result showed that the track used in the Astley belt match lacked several feet of being a full furlong, and the difference spoiled all the records, taking six or eight miles off Rowell's excellent performance.

The commonest cause of country records being bad is that country pedestrians too frequently use horse-racing tracks, which are measured in a peculiar manner. In a horse-race, especially in a trotting contest with wheels, the mile or half-mile line runs in the middle, or near the middle of the track, to equalize the chances of horses starting abreast. The advantage of "hugging the pole"—keeping to the inside of this line—on a circular or elliptic track, are too obvious to be enlarged upon, but the ardor of the horses seldom permits one to hold this advantage long, and the animals are continually crossing the line of distance, thereby making a serpentine course which equalizes the chances of all.

In pedestrian contests, on the other hand, each man hugs the rail as close as he can, and therefore the track must always be measured *close to the inside rail.*

In a hall or theater, where most walking tracks have been laid, the length must be suited to the capacity of the building; but when an open air track is available, there is no question as to the necessity of making it some simple multiple of a mile. A quarter-mile open air track would be the beau-ideal of a place for summer pedestrian contests, but if a half-mile or mile track is to be used, where one already exists for trotting contests, it will be necessary to lay out a second railing at the proper distance from the horse-rail, to enable the record to be made in the only way it can count.

Open air tracks, however, are not fit for six-day matches, on account of the liability to rain, and dew, which would spoil the track for walkers by making it muddy. Moreover, such tracks are seldom found near enough to cities to admit of the crowds that are necessary to make a foot-race pay. Horse racing is the pastime of rich people, who can afford to enjoy their amusement without regard to cost; but pedestrian matches are dependent on large crowds of spectators who must be tempted to drop in at any and all times. Therefore it is that pedestrian matches are almost always, and six-day contests invariably, held in large buildings, under cover; and the average length of track is either 110 or 220 yards, so as to make either eight or sixteen "laps" to the mile. The word "lap" has now become so familiar that few people reflect that it is merely the revival of an obsolete word meaning "to turn," and that so many "laps" mean so many "turns." If the building is large enough to hold an eight-lap track, it is to be preferred; but failing that, one must be satisfied with a ten, twelve, or sixteen lap track. For the convenience of our

readers, we furnish a table of lengths of tracks, making so many laps to the mile:

A	track	660		feet	long	gives	8	laps	to the	mile.
"	"	586	2–3	"	"	"	9	"	"	"
"	"	528		"	"	"	10	"	"	"
"	"	480		"	"	"	11	"	"	"
"	"	440.		"	"	"	12	"	"	"
"	"	406	2–13	"	"	"	13	"	"	"
"	"	377	1–7	"	"	"	14	"	"	"
"	"	352		"	"	"	15	"	"	"
"	"	330		"	"	"	16	"	"	"

This table shows the kind of tracks to avoid as difficult to measure. They are the thirteen and fourteen-lap tracks, which contain fractions that involve a division of inches and are so far improper. All the others are easily measured.

Next to the length comes the question of the best shape of track and the size of the building which controls it. The greatest possible length to be secured in any given building would obviously be in a line which should run against the outer wall all round, leaving the seats for the spectators in the center. This plan is open, however, to two objections. First, the spectators could only see the men when they were on their own side of the track; and, second, the pedestrians would have to turn four sharp corners in every lap round an ordinary building. These things must be avoided somehow. The pedestrians must at all times be visible from every point of the house and the corners of their track must be rounded for them to make the going easy.

The next form of track which would suggest itself is a circular one, in the middle of the building, but this has its own objection. A circular track is sure to produce dizziness, especially if it be a small one. The experience of the past few years has therefore dictated the use of the largest buildings only, with tracks where straight lines and curves are blended into a sort of ellipse; and the proportion of each adopted in Agricultural Hall, London, and Gilmore's Garden, New York, has proved itself capable of giving the best results in time to the men and comfort to the spectators.

These now famous tracks have a center formed by a parallelogram, with the upper and lower ends rounded into semicircles. This center is longer than it is broad, and leaves about two-thirds of the track—the sides—in nearly straight lines, the circular parts at the ends being each one one-sixth of the whole distance. If only two men are competing, as in the O'Leary matches with Hughes and Campana, the path is broad enough to lay out two tracks, on which the men can walk without interfering with each other's movements. This is the fairest plan; but if there are more than two competitors

they use a single eight-lap track, where the man who wishes to pass his opponent has to do so on the outside, before he can take the rail in front of him.

The center around which the track runs is a good place for spectators who wish to see the men closely; and is always occupied by a crowd of people, moving from side to side, and cheering vehemently at the more exciting portions of the race.

To reach this center visitors have to cross the track; but this, though objectionable, has not yet been found to have any very bad effects. All round the other side of the broad pathway are the rows of benches and private boxes where are seated the great mass of the spectators who do not care to stand. The only objection to Gilmore's, now Madison Square Garden, as a place for pedestrian contests, is the fact that the building is cheaply constructed, with a large number of wooden pillars which interrupt the view of portions of the track; but this defect is not serious in a race, where the point of view is constantly shifting.

We give on the frontispiece a diagram of the general arrangement of a building on the same principle as Madison Square Garden.

The model hall is of the largest size used, but gives a longer track. The inside path, shortest of all, measures eight laps to the mile, while a track laid out on the dotted line will give only seven laps to the mile. This line is fifteen feet and a quarter of an inch from the inner rail. The eight-lap track is five feet wide, to give ample room for each competitor to pass the other on the outside if he can. Each track has two straight stretches of 220 feet each, and a semicircular turn at each end. The diameter of the eight-lap semicircles is seventy feet three inches, and that of the seven-lap tracks is one-hundred feet and half an inch. In each case the actual measurement of the track will be a trifle over, rather than under the calculated distance, which must be tested by the measuring tape when the rail is set up. If it prove long, the rail is bent in, if short pushed out, till the tape just fits.

Those who cannot secure an engineer or official surveyor to measure their tracks are advised to use brass chains or steel tapes, especially the last, which are very handy.

A hall of the size given will hold thirteen thousand spectators when the whole of the ring is crowded with standers, as it was at the close of every Astley Belt match in New York, while there are good seats for seven thousand people outside the track, in a building 400 by 200 feet. The main path on which the different lap tracks are constructed, is twenty-five feet wide, to accommodate races where the starters are numerous, such as sprints of seventy-five yards or upward.

This size of building and track will be found the best for large cities, on account of the advantages it gives for the

meetings of athletic clubs, who always have two or more sprint races and handicap mile or two-mile walks. Hundred-yard dashes on such a track are made down one side, with the least possible turn; and by laying the finishing line on a slant across the curve at the end, the outside men can be favored enough to make all run just the same distance. There is no trouble about starting five or six men at a time on such a track.

The following estimates will show how, by following the same general outline and proportions, smaller buildings can accommodate the greatest number of spectators and the greatest length of track.

A building 100 feet by 50 will hold a railed inclosure 72 feet 6 inches long by 17 feet 6 inches across, giving a track 155 feet 3 inches long, 34 laps to the mile, and 8 feet wide, with accommodation for 800 spectators inside and outside the ring, 400 having seats.

A building 200 by 100 feet will hold a 16-lap track and nearly 3500 people, seating 1600.

A building 150 by 75 feet will hold a 24-lap track, and 2000 spectators, 1000 on seats.

With these general data and the diagram, a calculation of the capacity of any given building is easy. The main point is to have as long a track as can be squeezed in, consistently with securing a good view for the largest number of spectators.

Having treated of the best shape for a pedestrian track, the next question comes as to the materials of which it should be made.

Bearing in mind that the broad twenty-five foot track is to be a permanency for the use of athletic clubs and sprint races, it will have to undergo a great deal of wear and tear, and requires a firm smooth surface. Simple dirt will get trodden into ridges or become loose and heavy, while a stone pavement is too hard. An asphalt pavement, laid on the bare earth, gives a mixture of elasticity and firmness that suits sprint races very well, and has the further advantage of being easily repaired. For the main track, a thick covering of asphalt can hardly be bettered.

For six-day walks, however, the main track is altogether too hard. The long continuance of such walks makes the feet of the pedestrians very tender, and they require something softer.

Tanbark and sawdust are the agents used to build a special walking track, and the latter is far the most common. The best kind of track that has been laid in the United States, and one that has served as a model for all others since, was that used in the Astley Belt match, won by Rowell in 1879 from O'Leary, Harriman and Ennis. This track was bor-

dered on both sides with planks, and filled with some three inches of dry sawdust, smoothed with rollers. After O'Leary's retirement, the track was sprinkled with water and rolled all the time, the roller having to keep out of the way of the pedestrians. This path, thus rolled and wetted into firmness, was the perfection of a walking track. The dry sawdust was too soft and slippery, but the wet rolled path was perfection. It made no dust, was always springy and elastic, soft and cool to the foot, and conducive to good time. Such a path can hardly be bettered by any means with which the sporting world is now acquainted, and it is so easily made anywhere that we can heartily recommend it. Open air tracks for summer sprint-racing can hardly follow a better model than a common trotting track, but if a turf surface, level and free from stones, holes or roots, can be secured, it is still better except in a long drought, when the turf becomes very slippery.

CONDUCTING A MATCH.

The management of a pedestrian match of whatever kind is by no means an easy matter, and one that increases in difficulty with the magnitude of the prizes involved. Large prizes are sure to attract numerous competitors, and large crowds of spectators generally follow the athletes. Every year sees a number of athletic games held in our large cities, such as New York, Boston, Chicago, Philadelphia, Cincinnatti or St. Louis, but it is safe to say that not ten per cent. of these are even fairly carried out, while most are sad scenes of confusion. In New York city the only club that gives thoroughly satisfactory exhibitions is the New York Athletic, and the only well-conducted six-day matches involving more than two competitors have been the Astley and O'Leary Belt matches.

This statement involves a short account of the difficulties incident to a large pedestrian match or athletic meeting.

The troubles arise from two causes, numerous competitors and numerous spectators. These require a numerous staff to attend to their wants and prevent disorder and waste of money.

Let us first take the spectators. To bring them in is the ambition of every man or club that gives a match. To do so requires that the entertainment shall be well and plainly advertised; and it is not every one who can draw up an advertisement properly. The daily papers must be visited by the managers to secure notices in the news columns; and the

walls of conspicuous buildings must be lined with show-bills, setting forth the *place* and *date* of the show, with the *price of admission*. Every bill *should* contain this information, but a great many amateur club bills do not contain it.

Having attracted the people, the next thing is to admit them in such a way that no one shall get in without paying or on a complimentary ticket, and that the tickets shall act as a check on the money-takers' accounts. We have seen amateur shows where the man at the door took money and tickets indifferently, so that the managers were entirely at the mercy of his honesty. It is therefore absolutely necessary that two persons should be at the door, one to take the tickets, the other to sell them, and no person should be admitted except by a ticket of some sort. The tickets should, as fast as received, be dropped into a box with a slit at the top, the box to be locked and the manager to have the key. The tickets sold at the office should be of different color from the complimentaries, of which the manager should be sole custodian.

At the "counting of the house" the ticket-box is unlocked, the tickets carefully counted, and the result shows how much money ought to be in the box-office. In a six-day match, where the receipts are very large and constantly accumulating, it is usual to have two sets of ticket-takers and box-office men, and to count the house morning and evening.

In large matches, too, the managers are sometimes obliged to change the shape, color and appearance of their tickets from day to day, to avoid the introduction of forgeries, while detectives are necessary to watch the ticket-takers for fear they may be in collusion with the box-office man.

Within the house, if there are any reserved seats, it is necessary to have ushers to direct the holders of coupons to their proper places, but reserved seats are not much in favor at walking matches.

In large matches where there is a great mixed crowd, the attendance of the police is frequently advisable to prevent attacks on competitors by the backers of men opposed to them. Had it not been for the police, Rowell and Hazael would have both probably been severely hurt, if not disabled for life at the last Astley Belt match.

With regard to the competitors, the duty of the management is confined to giving them a good track, air as pure as possible, with responsible scorers and timers. Their quarters and diet are matters for their own attention, and depend on the finances of each. It has become customary to set up tents for all competitors in a six-day match round the inside rail and opening on the track. These tents are in fact preferable to huts of board, unless the weather is very cold indeed, but they should be provided with camp stoves in case it becomes necessary to give the competitor a warm bath, as frequently happens.

The duties of the management as regards a good track for a six-day match have already been explained. It is also their duty to see that a sufficient force of scorers and timers is on hand. Where the competitors are few this is not difficult, but where there are fifty or more it demands great care to prevent confusion. In a six-day match it is usual to have twelve relays of scorers, volunteers from the various athletic clubs who take every alternate twelve hours from Monday to Saturday inclusive.

The system of scoring adopted and used at the late great walk in Madison Square Garden was a great advance on all previous efforts and could hardly be excelled for simplicity and accuracy. There were sixty competitors, and each had to be recognized and scored eight times for every mile, or four thousand times in five hundred miles, in such a manner that there could be no mistake as to his identity. To effect this result the following were the arrangements:

Each competitor carried the number of his entry in figures a foot long on his left breast, and they were started in sets of four or six, to each of which was given a special timer and scorer. It was the timer's business to watch for his numbers and no one else's, and to call them out every time they came by the stand. Behind him sat the scorer with his book, and it was his business to make a mark against each number as called by the timer, columns being ruled for that purpose in the book. Thus each man attended to his business, without any temptation to increase or diminish his scores.

Besides attending to the scoring of the competitors, the management owes a duty to the spectators of announcing the results of that scoring through the varying fortunes of the race. This is generally done by means of a large blackboard, whereon the names and scores of the leaders are chalked up, so that every one can see them; but where the competitors are numerous this will not serve for all, and another method is taken at the scoring stand where each man has his name on a placard two feet long, underneath which are placed two more placards one bearing the word "miles," the other the word "laps." Before each of these is a vacancy where a number can be hung, and each name has a man to attend to it, whose duty is to move the "mile" and "lap" numbers as they change. In the last match dials with pointers were substituted for the cards, with the advantage of increased simplicity.

So much for six-day professional matches, which are the best managed as a rule. Something remains to be said about amateur walks and runs, because they are subject to much mismanagement. The New York Athletic Club is in fact almost the only organization in the metropolis that gives thoroughly enjoyable entertainments, because they are properly managed.

The reason of the trouble at most amateur matches is that the competitors are not kept in proper discipline, but are allowed to run over the management, violate rules, interfere, argue, protest and grumble, till the managers lose their heads in the confusion. The first thing for the managers of an athletic meeting to do is to make a set of rules that will cover all conceivable cases, and then to stick to them, and no better example of such rules can be given than those of the New York Athletic Club, which will be found in a later chapter.

The troubles generally arise in questions of time and precedence among a large number of walkers, for it is in square walking contests that the dispute generally occurs. There may be fifty or more men at the scratch and all or most have walked fairly enough till near the finish, when they have tried on their most knowing tricks to cover up a run and get in first. It is here that the experience and temper of the judges are most severely tried. They may have to rule out as many as three or four men and give the first prize to a man who crosses the score third or fourth, and this is a difficult thing to do without appearing unjust.

The competitors in such matches must always wear numbers to save confusion, and the scorers and timers have less work than in a six-day race.

"Timing" a man *correctly* requires two men; one to hold the watch with his thumb ready on the stop looking at nothing else; the other to watch the man and call out "stop" as he crosses the line. No man can do timing single-handed. He is sure to make mistakes from disturbance of mind on account of divided attention.

For the convenience of those without practical experience in conducting athletic meetings we print an additional chapter containing the most approved rules, to which we refer the reader.

RECORDS OF PEDESTRIANISM.

THE first reliable record that we have of modern pedestrianism bears the name of Captain Robert Barclay. Of course there had been walkers before his time; but he was the first to bring walking, as a means of locomotion, into general notice. The first public match of this remarkable man took place in 1806, when he is said to have walked from Ury to Craithynaird, Scotland, and return, a distance of 100 miles, in 19 hours. Three years later, we find his most notable record. During the interval he had taken the name of Allardice in addition to his own, and is described on the records,

as Captain Robert Barclay Allardice, who made a match of two thousand guineas at Newmarket, England, that he could walk 1,000 miles in 1,000 consecutive hours, and did it, too. This was the first of these endurance matches publicly attempted, and was walked in the open air on the high road, where two inns were found, just a mile apart, near the town of Newcastle. Captain Barclay favored himself in this match by walking a mile at the end of one hour and going on with the next mile at the beginning of the succeeding hour, thus giving himself an hour and a half clear sleep or rest between each two miles. He won his bet, beginning June 1st, and ending July 12th, 1809.

This feat remained unexcelled till 1877, when William Gale beat it all to pieces. Starting on August 26th of that year, and ending October 6th, he succeeded in walking 1,500 miles in 1,000 hours, a mile and a half each hour, commencing on the stroke of the hour. This feat was done at Lillie Bridge, England, and was followed in November of the same year by 4,000 quarter miles done in 4,000 consecutive periods of ten minutes each. This Gale was the same person who trained Madam Anderson to bring the quarter-mile match to the United States; and that lady made a great monetary success out of it, though her feats were not remarkable, save as being executed by a woman.

The first flutter of interest in pedestrianism excited in the United States, was when E. P. Weston started, Oct. 29, 1867 to walk from Portland, Maine, to Chicago, Illinois, which he reached November 28th, (Thanksgiving Day) having successfully accomplished the task he set himself.

Up to that time, while there had been some races, where good runners had contested, walking was at a discount in the United States; but from the date of Weston's feat, pedestrianism became a fashionable amusement, and rich club-men were found who would walk matches on foot, instead of lolling in carriages, or trotting their horses.

The professionals during that time had been chiefly confined to England, where the best records had been made.

The best 100-yard sprinter of his day was George Seward, of Hammersmith, England, who made the amazing time of 9 1-4 seconds, Sept. 30, 1844, and did 120 yards in 11 1-4 seconds, May 3, 1847. These records have not yet been beaten.

The other early records that are still unexcelled are those of W. G. Scarlet, Newcastle, England, Sept. 7, 1841, who ran 140 yards in 14 seconds; Charles Westhall, Manchester, England, Feb. 4, 1851, who did 150 yards in 15 seconds, and Seward's unapproachable record of 200 yards in 19 1-2 seconds, made March 22, 1847.

Seward was one of the very few men who could keep up the rate of ten yards a second for a distance over a hundred yards.

Since his day, records of all other distances have improved greatly.

The best 125-yard record is American; that of J. W. Cozad, made Nov. 23, 1868, at Long Island Fashion Course, in 12 1-2 seconds. The year before, William Johnson, at Fenham Park, England, did 130 yards in 1-4 second less time.

The best 180-yard record is 18 1-5 seconds, made April 27, 1878, by L. Junker, at London. Junker was an amateur, and his performance is below that of Seward before referred to, not quite reaching 10 yards a second, while Seward beat that average.

The best furlong records are made by amateurs in the same year; W. Phillips doing the distance in 22 2-5 seconds, in London, England, Sept. 28, 1878; and L. E. Myers at Mott Haven, N. Y., making it in 22 3-4 seconds, Sept. 20, 1879.

Beyond a furlong, no man has yet succeeded in keeping up the rate of ten yards a second, the nearest approach being that of R. Buttery, Newcastle, England, Oct. 4, 1873. This runner did a quarter of a mile—440 yards—in 48 1-4 seconds, beating the best English record by two seconds and the best American by four seconds.

The best half-mile record was made in New Zealand by Frank Hewitt, of Lyttleton, in September, 1871, in 113 1-2 seconds, beating the best English records by four and the best American by ten seconds.

The best mile record was made in a dead heat between Richards and Lang, at Manchester, England, August 19, 1865, in 4 minutes 17 1-4 seconds; seven seconds better than had ever been done before. Lang had previously made two miles in 9m. 11 1-2s., in Manchester, England, August 1, 1863.

The best records from three to seven miles inclusive were all made by John White, at London, May 11, 1863. They were as follows: 3 miles in 14m. 36s.; 4 miles in 19m. 36s.; 5 miles in 24m. 40s.; 6 miles in 29m. 50s.; and 7 miles in 34m. 45s.

The best records for eight and nine miles were made June 1, 1852, by James Howitt, of London. He ran 8 miles in 40m. 20s., and 9 in 45m. 21s. This same Howitt, next year, March 20, 1852, ran 13 miles in 70m. 31s.; 14 miles in 76m. 12s.; 15 miles in 82m.; and 16 miles in 88m. 6s.

The best times for 10, 11 and 12 miles are 51m. 26s.; 56m. 52s.; and 62m. 2s.; all made by L. Bennett (*alias* Deerfoot) at London, April 3, 1863.

From 17 to 19 miles George Hazael is the champion, having done 17 miles in 1h. 38m. 53s.; 18 miles in 1h. 45m. and 19 miles in 1h. 51m. 14s. Hazael also made the best 20-mile record up to 1879, when his time was beaten by P. Byrnes at Halifax, Nova Scotia, Oct. 4. Byrnes ran 20 miles in 1h. 54m.—three minutes less than Hazael's best time.

Beyond twenty miles the running records are scanty and not remarkable.

The best records of walking are credited to William Perkins, the present English champion, as far as 22 miles. This Perkins is as remarkable in his specialty as was Seward in his sprinting, easily passing all competitors. He made his first great effort in London, June 1, 1874, when he left the best on record up to eight miles.

He did his first mile in 6m. 23s.; the second in 13m. 30s.; the third in 20m. 47s.; the fourth in 28m. 59s.; the fifth in 36m. 32s.; the sixth in 44m. 24s.; the seventh in 51m. 51s.; the eighth in 59m. 5s.; thus making over eight miles an hour.

Three years later he beat his own record July 16, 1877, and placed his name at the top of the list all the way up to 22 miles. The records were as follows:

Ninth mile, 1h. 8m. 7 2-5s.; tenth mile, 1h. 15m. 57s.; eleventh mile, 1h. 23m. 49s.; twelfth mile, 1h. 31m. 42 2-5s.; thirteenth mile, 1h. 39m. 42 1-2s.; fourteenth mile, 1h. 47m. 53s.; fifteenth mile, 1h. 56m. 13s.; sixteenth mile, 2h. 4m. 35 1-5s.; seventeenth mile, 2h. 13m. 11 2-5s.; eighteenth mile, 2h. 21m. 55s.; nineteenth mile, 2h. 30m. 45s.; twentieth mile, 2h. 39m. 57s.; twenty-first mile, 2h. 49m. 18s.; twenty-second mile, 2h. 58m. 52s.

The best records from thence to twenty-five miles Perkins did not beat. He had done the greatest distance on record in three hours and the miles above twenty-two remained credited to John Smith of London, sixteen years before. This pedestrian Nov. 10, 1851, finished his twenty-third mile in 3h. 20m. 39s.; his twenty-fourth in 3h. 30m. 58s.; and his twenty-fifth in 3h. 42m. 16s.

The difference between him and Perkins is shown in the difference of time between the 22 and 23 miles, which is 21m. 47s, whereas the average of each of Perkins's miles was 8m. 6 3-5s.

From twenty-five up to fifty miles the best walking time on record is credited to William Howes, who on March 30, 1868, made 26 miles in 3h. 54m. 18 s., 23 minutes ahead of all others before or since. He made a record of 50 miles in 7h. 57m. 44 seconds. We omit the intermediate times as unimportant; but the average of each mile was 8m. 26s. From thence to 77 miles Daniel O'Leary takes the palm, his 76th mile having been accomplished in 13h. 37m. 26s. at Chicago, Illinois, Nov. 10, 1877.

Beyond that distance, Howes again takes the lead, with the best records up to 129 miles, made Feb. 22 and 23, 1878, at London. O'Leary made the best American records up to 100 miles in his Chicago walk. Howes's record for 77 miles is 13 hours, 56 minutes and 5 seconds; while his 129th mile was walked in 24 hours 20 minutes and 30 seconds.

From thence to 173 miles Henry Vaughan takes the lead at square walking, having accomplished that distance in 38 hours, 28 minutes and 13 seconds.

Beyond this point Daniel O'Leary comes again to the front, in his matches with Weston at Agricultural Hall, London, and with Crossland at Manchester, both in 1877. His time for 174 miles was 39 hours, 5 minutes, 48 seconds, and from thence to 241 miles he made the best walking time on record, the last distance being accomplished in 56 hours, 48 minutes, 37 seconds.

Peter Crossland then passed him and led for 46 miles, making 287 miles in 69 hours, 22 minutes, 22 seconds.

From this point upward Daniel O'Leary still remains the king of the square walkers, having accomplished 519 miles in 141 hours, 6 minutes and 10 seconds.

The longest distance ever walked without a rest is 120 miles, done by Crossland Sept. 11, 12, 1876.

Our own Harriman did 160 miles with only 17 minutes rest in New York, May 10, 1878.

Howes leads the record for one-day walks with 127 miles, and O'Leary tops all the rest up to six days.

Perkins leads the records for one, two and three hours.

Since these records, the "go-as-you-please" race has been introduced, where walking and running are used *ad libitum*, and the distances gone in given times has steadily risen. George Hazael leads the record with 133 miles in 24 hours, not likely ever to be beaten, and Frank Hart has passed them all, by running 565 miles in six days.

The general excellence of records in these matches steadily improves, and where there were only two men in the first match who made 500 miles or over—Vaughan and O'Leary—we have lately seen no less than eight men beat 500 miles out of a field of sixty starters, and nine men beat 450 miles in the same time.

The total distance made by O'Leary when he won the first match of this sort was 520 miles and a fraction, most of it walked, but since then the runners have passed him beginning with Corkey, who made a fraction of a mile more in less time. Then Blower Brown did 542 miles, and people called him a marvel, till a few weeks later Weston ran 550 miles in the same time. Since that, the limit has been passed by Brown, in the last English match, where he made 553 miles, and by Hart as above. Rowell, the luckiest of lucky pedestrians, who has made an independent fortune out of his two muscular legs, has not had to make any very remarkable records to win the $40,000 that he carried away from Madison Square Garden. He won his first race by 500 miles and his second by a nominal 530, which proved to be only 523 on account of a short track. An overrated man; his successes

have arisen from the fact that he has always taken better men than himself at a disadvantage in point of condition, and so has won an easy victory. Before he can be rated as the foremost pedestrian, he will have to beat Hart's best record

This brief sketch of the records of pedestrianism is given to furnish our readers with a standard of comparison by which to estimate the value of their own performances, and a short abstract of the shorter distances will be found convenient for use.

ABSTRACT.

Ten yards per second has been done by sprinters up to 220 yards.

A mile has been run in 4m. 17s.

Ten miles has been run in 51m. 20s.

Twenty miles in 1h. 57m. 27s.

A mile has been walked in 6m. 23s., but only once, by the same man who walked 8 1-11 miles in one hour, 15 1-2 miles in two hours, 22 1-4 miles in three hours.

These records should be kept in the memory as convenient, so that the amateur may gauge his own powers correctly by the best professional work.

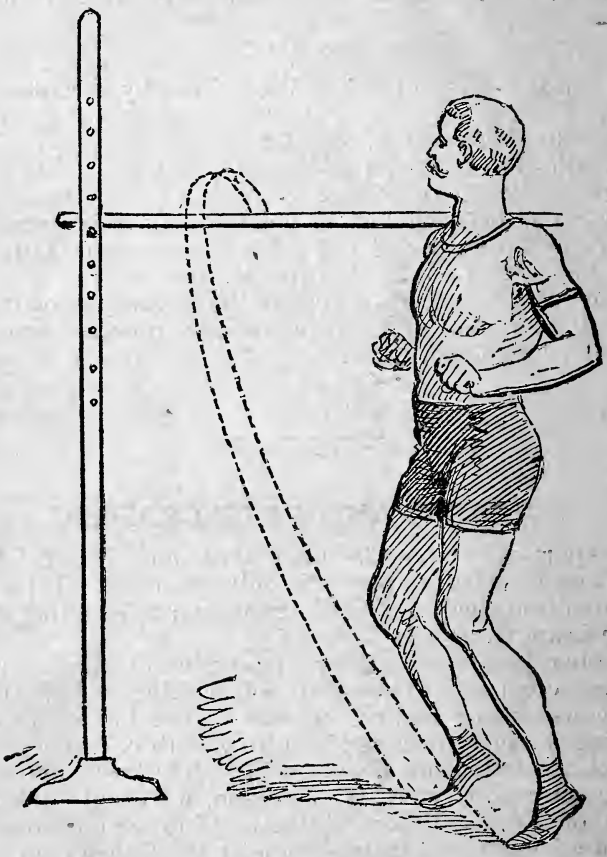
JUMPING AND POLE-LEAPING.

THE sport of Jumping is one of those most beneficial to the health and muscles of any commonly practiced. It is divided into three branches: 1, Standing Jumps; 2, Running Jumps; 3, Pole-Leaping.

Standing jumps are either high or broad, the latter being the most common. The secret of making a *high* standing jump consists in standing *sidewise* to the bar or tape, and throwing the body over as if vaulting with one hand, arching the back inward as much as possible. The best standing high jumper on record is E. W. Johnson, a Toronto man, now keeper of the Baltimore Athletic Club Gymnasium. He jumped a bar 5 feet 3 inches high, at the Caledonian Games, at Baltimore, May 27, 1878. This beats the best English records 5 inches. In jumping, Johnson leaves the ground with the right foot first, as in the cut on next page, which shows the direction in which his feet go over the bar. The cut also shows the common leaping-bar and standards furnished with holes three inches apart, in which pegs are stuck to support the bar on the side opposite the jumper. If he strikes it by accident it falls without hurting him, being merely a light strip of pine scantling.

The standing broad jump is made straight forward into a piece of soft earth which has been dug up for the purpose. It is made with or without weights in the hands, and depends on the strength of the thigh and calf of the jumper, and on long practice.

The best standing jump on record was made by James Emerick, Oil City, Pa, Sept. 19, 1878. It was 13 feet 10 inches,



STANDING HIGH JUMP.

with weights; besides which, 13 feet 7 inches have been done by an English professional, and 12 feet 2 1-2 inches by a California amateur.

There is but little to say about the standing broad jump except that practice makes perfect.

Running jumps are also high and broad. The high jump is made over the bar figured in last chapter, but in a different

manner. We have seen Johnson try to go over it sidewise, as in his standing jump, but not with enough success to justify his method. The running high jump then must be made square to the bar, beginning with a slow run, quickened in the last twenty steps, till both feet spurn the ground with their utmost force and the leaper goes over the bar. Here, also, there is very little to be said as to proper or improper methods of leaping. Instinct teaches the right way for a high leap better than anything else, and nothing but constant practice will strengthen the muscles to enable the leaper to make a good record.

The best high jump on record was made by an English amateur, M. J. Brooks, an Oxford student, April 7, 1876. He topped a bar 6 feet 2 1-2 inches, passing the best English professionals by 3 inches and Johnson by 4 inches. The best American amateur jump was made by a Columbia student, Conover, in 1878, and is only 5 feet 6 3-4 inches—not much compared with the English record.

The running broad jump is made with or without a spring board, the only official records being those made without the board, and off level ground. The best on record is English, or rather Irish, amateur, John Lane, of the Dublin University Athletic Club, having made 23 feet 1 1-2 inches, June 10, 1874. The best American records are nearly two feet behind this performance.

Pole-leaping is either high or broad, and in either case is a very valuable accomplishment to acquire. With a pole, a practiced athlete can make light of a six-foot wall, for its hight is well within his powers. The art takes some time to acquire, and is one that exercises every muscle of the body.

It calls first for a pole from six to nine feet in length, made preferably of ash, as that is both light and tough.

To begin learning on this, the pupil rests one end on the ground, and grasps the pole with both hands above his head. Then, jumping up, he raises his body with bent arms, and swings as far as he can. With a week's practice almost any young man can learn to take a jump of eight or ten feet in breadth from a standing position. To cross a broad ditch a short run is taken and the pole is held differently.

The right hand grasps it above the head, *thumb uppermost*, while the left hand holds it, *thumb down*, as high as the waist. The pole is grasped higher up in proportion to the distance to be cleared, beginning with small ones and slowly increasing the length of pole, till it can be taken by the very end.

This becomes still more necessary in the high pole leap, where eleven feet and an inch have been cleared in England. To take such a leap requires at least a thirteen-foot pole.

In pole-leaping the weight of the body on the pole is sustained by the arms, and the whole office of the legs is to en-

able the body to go high enough to carry the pole to a perpendicular. The hight leaped is only limited by the possible length of pole carried.

Pole-leaping is coming into fashion but slowly in America; the best records being nearly a foot behind those of England, where there is more practice of the kind. For a sportsman in the country, pole-leaping is a very valuable accomplishment, as it would save him many a ducking in ditches and climb over fences.

In the chapter on athletic meetings will be found all the rules that govern leaping contests for prizes, to which we refer the reader

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BICYCLING.

THE sport of Bicycling is one that has come into rapid favor in this country since the advent of the English riders, who have accomplished a thousand miles a week; and the only drawback to its universal adoption is the first cost of the machines. When that is reduced, as it will be, to about fifty dollars, payable in installments like sewing machines, the bicycle will become a favorite with the whole American population as it is in England with the majority of middle class young men.

Even now the fever is spreading rapidly thanks chiefly to the efforts of Mr. Wentworth Rollins, the present king of bicyclists in America. He sells machines to people he can trust on installments and has a large stock of goods on hand which he sells below the usual prices to beginners.

The pioneers of bicycling in the United States were the Pope Manufacturing Company, who started factories and schools in the cities of Boston and San Francisco, where the fever started almost at the same time, but since that period bicycling has spread to most of the large cities, and has training schools in all.

There is but little information that can be given to an intending bicycler except to recommend him *not to buy a machine till he has been at the school long enough to know the good and bad points of every bicycle in the market.*

The prices of bicycles range from $80 to $100, according to size of wheel; the smallest being 42 inches in diameter, the largest 60 inches. The best way to get enjoyment out of the sport is to form a club of congenial spirits who will ride together. A single bicyclist is apt to attract too much attention in country places, and would often be insulted, where two or three together would meet with a hearty welcome. Moreover, company is elevating to the spirits.

For the use of bicycle clubs we subjoin the model rules of the San Francisco club, which can hardly be excelled for completeness and care. They are printed on strips of cardboard, and carried by each member of a club for reference, till he is perfectly familiar with them.

BICYCLING RULES.

SECTION 1.—The time named for a club excursion is the exact time of *the start*, which will in all cases be punctually observed. Members are therefore urgently requested to be at the spot named at least *ten minutes before*, that they may arrange themselves in order for the start, and receive the instructions of the leader as regards signals, and any other directions that may be necessary.

SEC. 2.—At the sound of "Fall in," the members will arrange themselves side by side upon the right of the road, with bicycle facing inward, leaving a space of at least eight feet between each man. At the sound of "Mount," the machines will be turned in the direction of the proposed run, and the company will mount, beginning at the front, each man before he starts, being careful to see that the rider immediately in front of him has safely reached the saddle, and proceeded at least two revolutions.

SEC. 3.—As a general rule the company should ride two abreast; but in towns and villages; in meeting and passing vehicles (unless the road is broad); in riding up and down hills, and where the road is bad and requires picking, single file should be taken, *the right-hand man* always *quickening*, and the left-hand man dropping in behind him.

SEC. 4.—When in single-file, an interval of at least *four* bicycle lengths should be kept between each rider, and in double-file, eight lengths between each pair. In approaching a hill, whether up or down, the leading files should quicken and the rear files slacken, so as to allow of the company extending out to double distance, and on reaching the level they should slacken and quicken respectively, until the original interval is attained.

SEC. 5.—Dismounting should always be commenced from the rear, each man passing the word forward as he reaches the ground.

SEC. 6.—It is undesirable for a company to ride down a long hill with a curve obstructing a view of the bottom. It is better for the leader to advance alone until he sees that all is clear, and then whistle the others on.

SEC. 7.—The ordinary rules of the road as regards the passing of vehicles, etc., should be rigidly adhered to, as follows:

A—In meeting a vehicle, always pass to the right.

B—In overtaking a vehicle, always pass to the left.

C—The ground in front of a horse should not be taken until the bicyclist is at least ten yards ahead of him.

D—A horse should *never* be passed *on both sides* at once.

E—A *led* horse should always be passed on the same side as the man who is leading it.

F—Before overtaking a rider, it is well to give some sort of a warning. When alone, a short cough will generally suffice. In company-riding, a word to your companion will attract the necessary attention. The mere sound of a human voice is often all that is wanted to prevent a horse from starting at the sudden passage of the noiseless machine.

G—If a horse on meeting a bicycle, shows signs of restiveness, the leader should order a dismount at his discretion (even if he himself has passed the horse), and should invariably do so on any signal or request from the driver or horseman.

H—In company-riding, the leader, on passing any one (whether driving, riding or walking,) should announce that *others* are following close after, and the rear man should in the same way signify that all have passed.

I—Inattention to these and other rules and courtesies of the road will cause annoyance to the public, and create prejudice against bicycling.

SIGNALS.

SEC. 8.—The following signals will be used when on a run in company, to preserve order and insure against accident:

Fall in—One long whistle.

Mount—One short whistle.

Dismount and Halt—Two short whistles.

Dismount and Walk—Two long whistles.

Form Twos—Two short whistles three times.

Form Single File—Three short well separated whistles.

Extend Line—One short and one long whistle three times.

Close up Line—One long and one short whistle three times.

Quicken Speed—Three short whistles three times.

Slacken Speed—One long whistle.

Ride at Ease—Two short and one long whistle three times.

Danger—Look out when signaled from front to rear—six or more short whistles; accident when signaled from rear to front—six or more short whistles.

RULES FOR ATHLETIC MEETINGS.

To make this work as complete as possible, we have resolved to insert the best models of rules for athletic meetings of all kinds, founded on those of the N. Y. Athletic Club. This association is the largest in the country and has always been successful in its meetings, which have passed off without a single fiasco on record. Its rules can therefore hardly be unworthy of imitation and have in fact been the model for those of all successful athletic clubs.

These rules we therefore print below. They cover, as will be seen, all sorts of athletic sports which do not need other description.

American Athletic Rules.

MEETINGS.

Officers.—The officers of an athletic meeting shall be: One clerk of the course, with assistants, if necessary; one starter; one judge of walking, with assistants, if necessary; one scorer, with assistants, if necessary; three timekeepers; three judges at the finish; three measurers; one referee.

Clerk of the Course.—He shall record the name of each competitor who shall report to him; shall give him his number for each game in which he is entered, and notify him, five minutes before the start, of every event in which he is engaged. The assistants shall do such portions of his work as he may assign to them.

Starter.—He shall have entire control of competitors at their marks; shall strictly enforce Law 3, and shall be the sole judge of fact as to whether or no any man has gone over his mark. His decision in such cases shall be final and without appeal.

Judge of Walking.—He shall have entire control of competitors during the race; shall strictly enforce Law 8, and his decision as to unfair walking shall be final and without appeal. The assistants shall do such portion of his work as he may assign to them.

Scorer.—He shall record the laps made by each competitor, and call them aloud when tallied, for the information of the contestants. He shall record the order of finishing and the times of the competitors in walking and running races. The assistants shall do such portions of his work as he may assign to them.

Timekeepers.—Each of the three timekeepers shall time every event, and in case of disagreement the average of the three

shall be the official time. Time to be taken from the flash of the pistol.

Judges at the Finish.—Two shall stand at one end of the tape, and the third at the other. One shall take the winner, another the second man, and the other the third man; they shall also note the distances between the first three as they finish. In case of disagreement the majority shall decide. Their decisions as to the order in which the men finish shall be final and without appeal.

Measurers.—They shall measure and record each trial of each competitor in all games whose record is one of distance or hight. Their decision as to the performance of each man shall be final and without appeal.

Referee.—He shall, when appealed to, decide all questions whose settlement is not provided for in these rules, and his decision shall be final and without appeal.

Competitors.—Immediately on arriving at the grounds each competitor shall report to the clerk of the course, and receive his number for the game in which he is entered. He shall inform himself of the times at which he must compete, and will report promptly at the start, without waiting to be notified. No competitor allowed to start without his proper number.

Inner Grounds.—No person whatsoever allowed inside the track except the officials and properly accredited representatives of the press. The authorized persons will wear a badge, and intruders will be promptly ejected. Competitors not engaged in the game actually taking place will not be allowed inside or upon the track.

LAWS.

1. *Attendants.*—No attendants shall accompany a competitor on the scratch or in the race.

2. *Starting Signals.*—All races (except time handicaps) shall be started by report of pistol fired behind the competitors. A miss fire shall be no start. There shall be no recall after the pistol is fired. Time handicaps shall be started by the word "Go."

3. *Starting.*—When the starter receives a signal from the judges at the finish that everything is in readiness he shall direct the competitors to get on their marks. Any competitor starting before the signal shall be put back one yard, for the second offense two yards, and for the third shall be disqualified. He shall be held to have started when any portion of his body touches the ground in front of his mark. Stations count from the inside.

4. *Keeping Proper Course.*—In all races on a straight track, each competitor shall keep his own position on the course from start to finish.

5. *Change of Course.*—In all races on other than a straight track, a competitor may change toward the inside whenever he is two steps ahead of the man whose path he crosses.

6. *Fouling.*—Any competitor shall be disqualified for willfully jostling, running across, or in any way impeding another.

7. *Finish.*—A thread shall be stretched across the track at the finish, four feet above the ground. It shall not be held by the judges, but be fastened to the finish posts on either side, so that it may always be at right angles to the course and parallel to the ground. The finish line is not this thread, but the line on the ground drawn across the track from post to post and the thread is intended merely to assist the judges in their decision. The men shall be placed in the order in which they cross the finish line.

8. *Walking.*—The judge shall caution for any unfair walking, and the third caution shall disqualify the offender. On the last lap an unfair walker shall be disqualified without previous caution.

9. *Hurdles.*—The regular hurdle race shall be 120 yards, over 10 hurdles, each 3ft. 6in. high. The first hurdle shall be placed 15 yards from the scratch, and there shall be 10 yards between each hurdle. There may be (by special announcement) hurdle races of different distances and with different number and length of hurdles.

10. *Jumping.*—No weights or artificial aid will be allowed in any jumping contest except by special agreement or announcement. When weights are allowed there shall be no restriction as to size, shape, or material.

11. *Running High Jump.*—The hight of the bar at starting and at each successive elevation, shall be determined by a majority of the qualified competitors. In case of a tie the referee shall decide. Three tries allowed at each hight. Each competitor shall make one attempt in the order of his name on the programme; then those that have failed, if any, shall have a second trial in regular order, and those failing on this trial shall then take their final trial. Displacing the bar and nothing else, counts as a "try." A competitor may omit his trials at any hight, but if he fails at the next hight he shall not be allowed to go back and try the hight which he omitted.

12. *Pole-Leaping.*—The rules for this game shall be the same as those of the running high jump.

13. *Hitch-and-Kick.*—The competitors are allowed unlimited run, but must spring, kick, alight, and hop twice with the same foot. The hight of the object at starting and at each successive elevation, shall be determined by a majority of the qualified competitors. In case of a tie the referee shall de-

cide. Three tries allowed at each hight. Each competitor shall make one attempt in the order of his name on the programme; then those who have failed, if any, shall have a second trial in regular order, and those failing on this trial shall then take their final trial. Hitting the object, and nothing else, counts as a kick, and kicking higher than the object without hitting it is not a kick. Springing from the ground counts as a try. A competitor may omit his trials at any hight, but if he fail at the next hight he shall not be allowed to go back and try the hight which he omitted.

14. *Standing High Jump.*—The competitors may stand as they please, but must jump from the first spring. The hight of the bar at starting and at each successive elevation, shall be determined by a majority of the qualified competitors. In case of a tie the referee shall decide. Three tries allowed at each hight. Each competitor shall make one attempt in the order of his name on the programme; then those who have failed, if any, shall have a second trial in regular order, and those failing on this trial shall then take their final trial. Displacing the bar and nothing else, counts as a "try." A competitor may omit his trials at any hight, but if he fail at the next hight he shall not be allowed to go back and try the hight which he omitted.

15. *Running Wide Jump.*—The competitors shall have unlimited run, but must take off behind the scratch. Stepping any part of the foot over the scratch in an attempt shall be "no jump," but shall count as a "try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his jumps. The measurement shall be from the scratch line in front of the jumper's feet to the nearest break of the ground made by any part of his person. The same rules govern running hop step and jump, and all similar games.

16. *Standing Wide Jump.*—Competitors must jump from the first spring. Stepping any part of the foot over the scratch in an attempt shall be "no jump," but shall count as a "try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his jumps. The measurement shall be from the scratch line in front of the jumper's feet to the nearest break of the ground made by any part of his person. The same rules govern standing three jumps, standing hop, step and jump, and all similar games.

17. *Putting the Shot.*—The shot shall be a solid iron sphere weighing 16 lbs. It shall be put from the shoulder with one hand, from between two parallel lines, 7 ft. apart. Touching the ground outside either line with any part of person, before the shot alights, shall make the attempt "no put," which

counts as a "try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his puts. The measurement shall be from the nearest break of the ground made by the ball, perpendicularly to the scratch line, extended, if necessary, to meet this perpendicular.

18. *Throwing the Hammer.*—The hammer-head shall be a solid iron sphere, weighing 16 lbs., the handle shall be of hickory wood, and the length of hammer and handle, over all, shall be 3 ft. 6 in. The competitor shall stand at and behind the scratch, facing as he pleases, and throw with either or both hands. Touching the ground in front of the scratch with any portion of the person, before the hammer alights, shall make the attempt "no throw," which counts as a "try." Letting go of the hammer in an attempt counts as a "try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his throws. If the head strike first the measurement shall be from the nearest break of the ground made by it. If the handle strikes first, one length of the hammer shall be allowed from the mark made by the end of the handle toward the mark made by the head of the hammer, and the measurement shall be from this point. The measurement shall be to the scratch line half-way between the thrower's feet.

19. *Throwing the Hammer with a Run.*—The hammer-head shall be a solid iron sphere, weighing 16 lbs., the handle shall be of hickory wood, and the length of hammer and handle over all shall be 3 ft. 6 in. Unlimited run is allowed, and the competitor may deliver the hammer as he pleases. Letting go of the hammer in an attempt counts as "a try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his throws. If the head strikes first, the measurement shall be from the nearest break of the ground made by it. If the handle strikes first, one length of the hammer shall be allowed from the mark made by the end of the handle, toward the mark made by the head of the hammer, and the measurement shall be from this point. The measurement shall be to the nearest footprint at the delivery. The footprints of the competitors shall be effaced after each throw.

20. *Throwing Fifty-six Pound Weight.*—This shall be of solid iron, and any shape of weight and handle is allowed, provided the whole weighs 56 lbs. The competitor will stand at and behind the scratch, facing as he pleases, grasping the weight by the handle, and shall throw it with one hand. Touching the ground in front of the scratch with any p[illegible]d

of the person, before the weight alights, shall make the attempt "no throw," which counts as "a try." Letting go of the weight in an attempt shall count as "a try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his throws. The measurement shall be from the scratch line (in front of the thrower's left foot), to the nearest break of the ground made by the weight, exclusive of handle.

21. *Tossing the Caber.*—The length of the caber to be 16 ft., the diameter at the thick end not more than 8 in., and at the small end not more than 4 in. The caber must be held by the small end, and tossed over so that the small end shall fall and remain beyond the butt. The competitors shall have unlimited run, but must take off behind the scratch. Stepping any part of the foot over the scratch in an attempt shall be "no toss," but shall count as "a try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his tosses. The measurement shall be from the small end of the caber perpendicularly to the scratch-line, extended, if necessary, to meet this perpendicular.

22. *Throwing the Ball* (*Lacrosse, Cricket, or Base-ball*).—The lacrosse ball shall be thrown from the lacrosse, the cricket and base-ball from the hand. The competitors shall have unlimited run, but must take off behind the scratch. Touching the ground in front of the scratch-line with any part of the person before the ball alights, shall make the attempt "no throw," which shall count as "a try." Each competitor allowed three trials, and the best three men have three more trials each. Each competitor shall be credited with the best of all his throws. To facilitate the measurement, a line shall be drawn parallel to and 300 ft. in front of the scratch-line. The measurement shall be from the nearest break of the the ground made by the ball, perpendicularly to the measuring line, extended, if necessary, to meet this perpendicular.

23. *Tug-of-War.*—In tug-of-war the following rules will be observed: (1.) The side creases to be 12 ft. from the center crease. (2.) The mark on the rope to be over the center crease when the word "heave" is given, and the team hauling that mark over the crease on its own side to be the winners. (3.) No footing holes to be made before the start. (4.) The contestants to wear socks, slippers, boots or shoes without spikes. (5.) The rope to be 1 1-2 in. in diameter. (6.) Immediately before the contest the captains of all the contesting teams shall draw their numbers. (7.) Not less than five minutes shall be allowed each team between heats. (8.) Captains shall toss for choice of sides before each pull. But if the same two teams pull more than once during the day, they shall change

ends at each successive pull. (9.) With two teams, they shall pull best 2 in 3. With three teams, one and two shall pull, then two and three, and three and one. With four teams, one and two shall pull, then three and four, and the winners pull the final. With five teams, first round, one and two, three and four, five has a bye; second round, winner of first heat pulls with five, and the winner of this heat pulls the final with the winner of second heat of first round. With six teams, first round, one and two, three and four, five and six; second round, winner of first and second heats. Winner of this heat pulls the final with winner of third heat, first round. Where more than six teams are entered, the arrangement of trials shall be on the same principle as in the above examples.

24. *Bicycling.*—When ordered into position for a start the men shall mount their machines, and one assistant for each competitor will hold his machine with its front wheel at the mark; at the starting signal the attendants are allowed to push the machine forward but not to follow it up. Riders must pass each other on the outside, and be a clear length of the bicycle in front before taking the inside; the inside man must allow room on the outside for other competitors to pass. Any competitor infringing this rule will be disqualified. In a race without using the handles, competitors must ride with the arms folded, or the hands and arms otherwise kept quite off the machine. Any competitor touching any part of his machine with his hands or arms will be disqualified. The Laws of Athletes govern all points not above specified.

In case there are any of our readers who think the above rules too long and complicated, we recommend for their use the much simpler and almost equally comprehensive English rules which follow.

English Athletic Rules.

1. No attendant to accompany a competitor on the scratch or in the race.

2. Any competitor starting before the word, to be put back one yard, at the discretion of the starter. On a repetition of the offense, to be disqualified.

3. All races to start by report of pistol.

4. In hurdle-races each competitor to keep his own hurdles throughout the race.

5. In sprint racing each runner to keep his own course.

6. Jostling, running across, or willfully obstructing another, so as to impede his progress, to disqualify the offender from further competitions.

7. All cases of dispute to be referred to the committee of management at the time.

8. The decision of the judges in all competitions to be final.

9. In pole leaping and high jumping, three tries allowed at each hight. The hight at each successive elevation to be determined by the majority of the competitors. Displacing the bar only to count as a try.

10. In broad jumping and weight putting, three tries allowed. In hammer throwing, two tries allowed. The three best competitors of the first trials to be allowed three more tries each for the final. The furthest throw of the five attempts, and put or jump of the six attempts, to win.

11. In hammer throwing and weight putting, the length of the run to be limited to 7ft. The weight to be delivered from the shoulder.

12. In broad jumping and weight putting, crossing the scratch-line in the attempt to count as "no try," and in hammer throwing as "no throw."

13. "No tries" and "no throws" count as tries.

14. The weight of the hammer and weight to be 16lbs. each.

15. The length from end of the handle of the hammer to the bottom of the sphere to be 3ft. 6in. over all.

16. No put or throw to count if the weight or hammer be delivered or followed with any part of the body touching the ground over the mark. All puts and throws to be measured from the edge of the pitch nearest the scratch-line to the scratch-line, and at right angles with the same.

17. In hurdle races, the hight of the hurdles when fixed to be 3ft. 6in., measured perpendicularly from the ground to the top bar

HARE AND HOUNDS.

INASMUCH as this game has become a popular pastime in America we have thought it best to make our handbook complete by giving a short account of the sport and its success in this country.

Hare and Hounds is an old pastime of English schools, and it is essentially a healthy game, good for boys and young men. It requires only one thing, plenty of good runners; and all young fellows are fond of running. Two of the fleetest of the club are chosen for "Hares" and provided with a sack full of scraps of paper for "scent." The rest of the club are "Hounds." The Hares are allowed ten or fifteen minutes' start, and set off across the country, dropping scraps as they go, throwing a handful behind them every hundred feet and scattering gradually. It is their object to get out of sight as soon as possible. The Hounds are put on the trail at the sound of a horn, and have to catch the Hares if they can. This is the whole of the game.

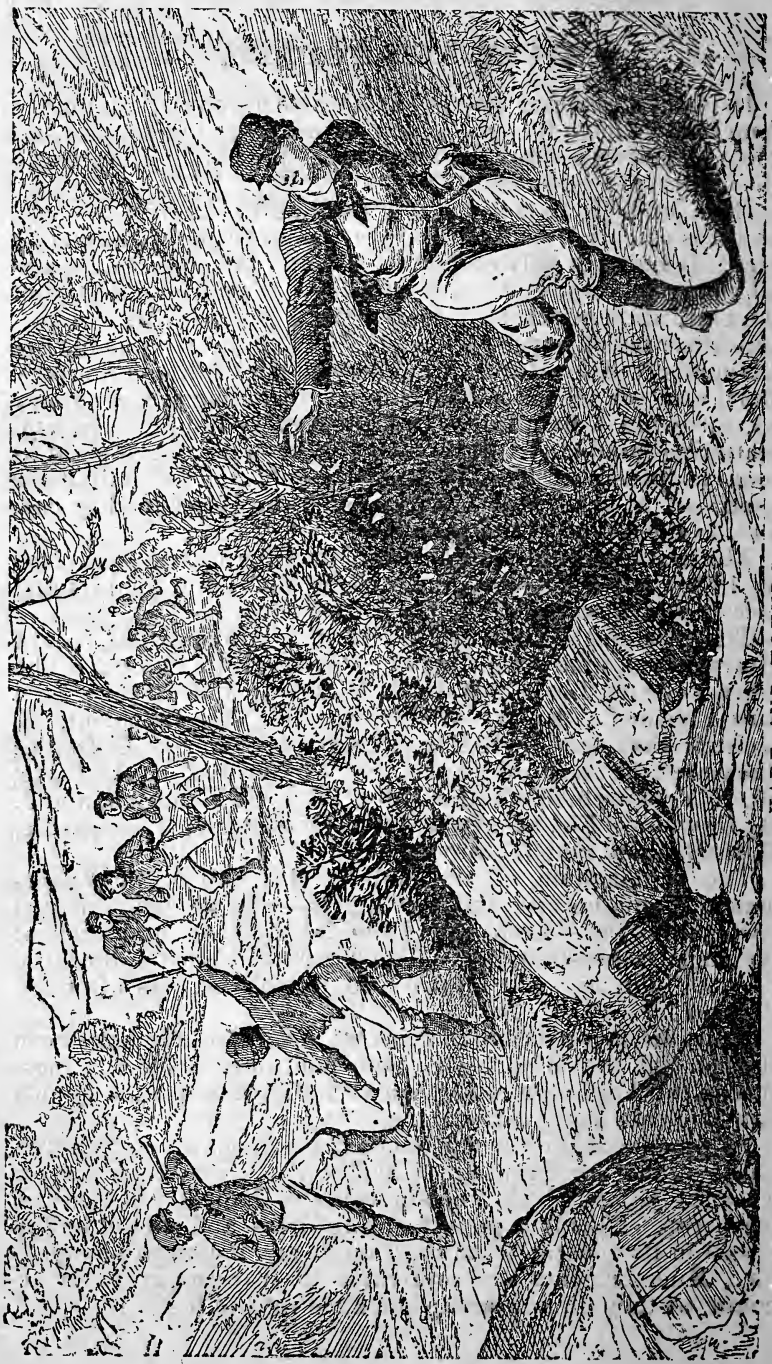
The first Hare and Hounds Club in America was organized in 1878 in Westchester county, New York, and held its first meeting on Thanksgiving Day of that year.

The idea of the club originated in a conversation on the Harlem boat, and the members were carefully chosen. The officers elected for 1878–9 were: President, J. J. Brady; First Vice-President, W. W. White; Second Vice-President, E. Nelson; Secretary, G. Heilwig; Assistant Secretary, G. Dolde; Treasurer, F. N. Lord; Executive Committee, L. A. Berte, W. S. Vosburgh, W. C. Hamilton, W. I. K. Kendrick, and J. B. Haviland; Field-Captain, W. S. Vosburgh; Lieutenants, F. H. Banham and W. Smythe.

The field-captain of the club is also called the "pace-maker;" and he and the lieutenants—who are denominated "whippers in"—keep the Hounds together and prevent the pack from straggling. The "Hounds" must follow the "scent" and are not allowed to cut off corners after the "Hares."

Since the organization of this club several others have been started, but the Westchester club continues to be the most successful, holding meetings on all holidays when the mud is not too heavy for good running.

As practiced, Hare and Hounds clubs generally have a uniform suitable for running. That of the Westchester club is a scarlet jacket, black knee-breeches or Knickerbockers and black cap. This is a good running dress and should be followed in its general features, though any colors are admissible. Knee-breeches are preferable to trowsers on every account, as they do not cramp the knee in running.



HARE AND HOUNDS.

The latest improvement in the game is the introduction of two colors in the paper thrown for scent. The Hares drop white paper when they go out, and red paper on the return home.

The game is an excellent one for young men and boys, and can be followed anywhere, with or without uniforms. The less frippery they indulge in the more will Americans like the sport.

Red jackets can be replaced by red shirts, which cost less and are lighter to run in. If the members of the club cannot afford to buy knee-breeches, they can probably alter old pantaloons into the necessary shape, and in the case of boys below twelve the common fashion of Knickerbockers saves all trouble.

In forming Hare and Hounds Clubs, as in Walking Clubs, it is advisable that the members should be equal in physical strength, when selected, to insure good runs and general satisfaction. If a hundred boys at some public school should wish to form clubs, it would be better to make at least two —one of large, the other of small boys—than to consolidate them. If both run together, the little fellows are sure to drop out in disgust when the others force the pace beyond their abilities, while the large boys will grumble at having to wait for the little ones. Clubs of small boys can be called "Beagles" to distinguish them from the larger "Hounds," and can enjoy a run as much as any one.

We repeat here—the less frippery indulged in by way of uniform, the better, though all should dress alike, so as to be recognized a long way off. A white band round the cap, with the letters of the club name, is enough to show out at a distance; and the captain could have a different colored cap to distinguish him. The Westchester club is composed of young men in good circumstances, and they can afford velvet collars and gold tassels. The less of these that our schoolboys affect, the better for the success of the club.

ARCHERY.

The pastime of archery, once the national sport of England, has in late years experienced a sudden and remarkable revival, both in that country and the United States. In England, as a revived amusement it became popular about the beginning of the reign of Queen Victoria; but in that country it has never been more than the pastime of a few dilettanti, the ladies forming the greatest portion of every gathering. In the United States it has only become a recognized sport within the last few years, the archery fever dating from the month of July, 1877, when Mr. Maurice Thompson issued his first illustrated article on the subject in *Scribner's Monthly*. Since that time this gentleman and his brother William have roused a great interest in the subject, and have superintended or instigated the foundation of a number of archery clubs in the various sections of the Union. The new sport spread so rapidly that in 1879 these clubs sent delegates to a grand archers' congress in Chicago, where they held a successful and well-attended meeting which bids fair to be repeated yearly and has roused enthusiasm for archery all over the Union.

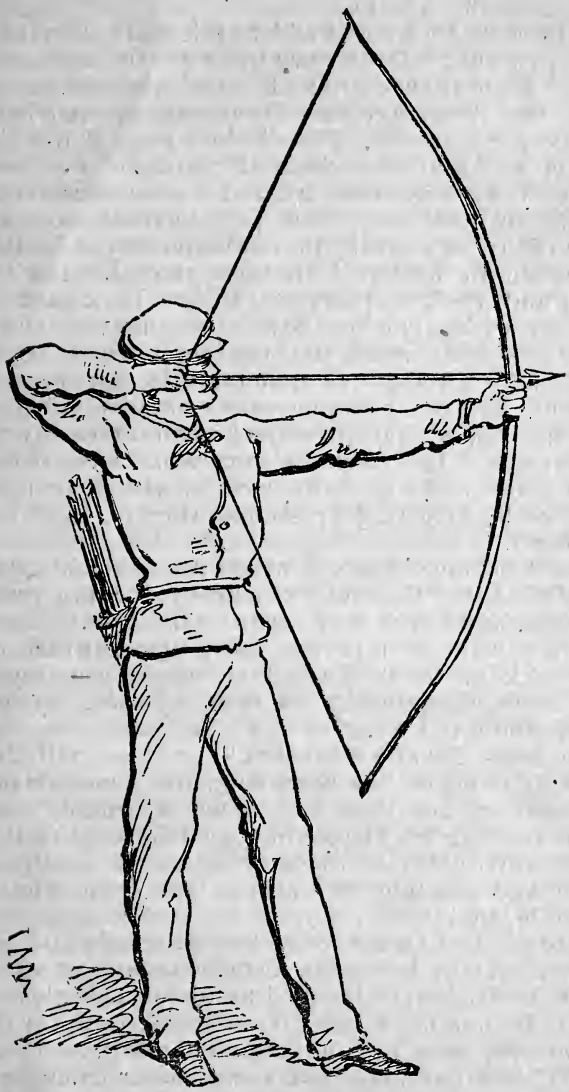
The secret of this success lies in the fact that the brothers Thompson have appealed to the practical side of the American character in their plea for archery. They have shown that as an amusement it is cheap and healthful, giving the best of exercise in the open air. They have further shown that as a means of sport in the pursuit of game it has many advantages over the shot-gun, and these advantages are so well stated by Maurice Thompson in his first paper that we cannot do better than to reproduce them.

He says: "If you can keep the shot-gunners away, three or four miles of a well-stocked stream will afford two archers plenty of sport for a whole season. Hunting them with the bow does not drive the birds off to other haunts; but the sound of a gun soon depopulates a stream, whether any duck be killed or not. * * * * * * * * *

"I do not wish to put in a special plea for archery, but I venture to say that no man or woman who cares at all for out-door sport can resist its fascination after he has once mastered its first difficulties. I have yet to find a person so grave and dignified that archery could not coax him into a bending humor. Indeed the bow is the *natural* weapon of man, and it affords him the most perfect physical and mental recreative exercise that can be conceived of. It is to the mind and body what music and poetry are to the soul—it trains them to the highest degree of healthfulness and strength.

"I do not decry angling and gunning, except that the latter is too destructive of game. I am an enthusiastic "disciple of

the rod," but whenever I cast a fly or troll a minnow my long-bow is near at hand, and a well-filled quiver at my side. You cannot combine gunning and angling on account of the



ARCHER'S POSITION.

weight of the gun and accouterments, and still more because the noise of firearms is sure to render timid fish sullen. I ave known the bass in a well-stocked pool utterly to refuse

the most tempting bait through an entire day, for nothing more than a pistol-shot fired close by. The twang of a bow-string seems to frighten nothing. It was the old first note of music made by Apollo."

Nothing that we could add to this little abstract of the advantages would tell the story more neatly and clearly, therefore we shall at once proceed to the practical part of the art.

The first thing necessary for archery practice is to secure a good bow and arrows. Till within a year, Philip Highfield of London was known as the best "bowyer" or bow-maker in the world; but since the advent of the American archery fever, Horstmann Brothers of New York have succeeded in making a line of archery goods that are pronounced by the Brothers Thompson to be equal in every respect to the best English make; and Peck and Snyder of New York have also turned out good work. The best bows of lemon wood, yew, or snake-wood, cost $10; while the best target arrows are worth $9 a dozen; and Thompson's model hunting arrows are worth $3 a dozen. The other paraphernalia (targets, quivers etc.) may be home made; but it is poor economy to buy cheap bows and arrows. The targets are made of plaited straw, covered with canvas, and contain four rings, which count as follows: Bulls-eye 9; first ring 7; second ring, 5; third ring 3; outside ring 1.

In archery meetings two targets are used, facing each other at any distance: the archers stand by one target and shoot at the other, any number of arrows agreed on. When all have shot, they walk over to the target, pick out their arrows and shoot back at the first target, combining walking and shooting. The maximum distance is eighty yards between targets, the minimum twenty.

The dress for an archer should be close, with no fluttering skirts to entangle the bowstring, and the secrets of position and accuracy are thus laid down by archery authorities. Roger Ascham, who wrote in Queen Elizabeth's time, says:

"The first point is, when a man should shoot, to take such footing and standing as shall be both comely to the eye and profitable to his use, setting his countenance and all other parts of his body after such a behavior and port, that both all his strength may be employed to his own most advantage and his shot made and handled to other men's pleasure and delight. A man must not go too hastily to it, for that is rashness, nor yet make too much to do about it, for that is curiosity; the one foot must not stand too far from the other, lest he stoop too much, which is unseemly, nor yet too near together, lest he stand too straight up, for so a man shall neither use his strength well, nor yet stand steadfastly. The mean betwixt both must be kept, a thing more pleasant to behold when it is done, than easy to be taught how it should be done."

Maurice Thompson says:

"A little care at first will save you a great deal of trouble and annoyance. When you begin to shoot, learn at once to stand firmly on your feet, the left slightly advanced, the head easily poised, the upper portion of the body gently inclined forward, and the shoulders neither lifted nor drooped. Hold the bow vertically with the left hand, the arm extended straight. Nock the arrow well on the string, draw with all the fingers of your right hand till you feel your right ear, fix your eyes steadily on the target and let fly. The arrow rests on the left hand, and is drawn to the head. The nock end of the shaft is held between the first and second fingers of the right hand and upon the string, which is drawn to the right ear by all the fingers being hooked stiffly over it. The release must be smart and clear, giving the arrow a strong, even flight.

"Never try to take aim when shooting, but fix your eyes steadily on the mark, and guide your arrow by your *sense of direction.*

"*Squeeze* the bow-handle with the left hand. You cannot hold it too fast. Draw quickly and evenly. Let go without 'bobbling' or tremor."

In a little story written by William Thompson (the brother of Maurice and the champion archer of the Union) there is a still more valuable piece of advice as to how to take aim. He makes one of the characters, who has hitherto always been unsuccessful at a target, hit on the secret, which he tells his friend. It is virtually as follows:

"After nocking the arrow, *draw it up to the right ear with the right hand, and hold it there as if it was screwed fast.* Think no more of your right hand, but *point your left fist* at the target and let fly."

This tells the secret of archery better than an elaborate treatise. The aim is taken *with the left arm, not the right.* Target shooting is, however, a bad school for learning to shoot at game, and here again Maurice Thompson comes in with his invaluable practical hints on the subject. He says:

"One who is trained to aim at a large, graduated target, either with gun or bow, can rarely shoot well at game. The reason is that in target shooting at a fixed distance he gets used to a certain size, color, and condition of *background,* and when he gets into the woods and lifts his bow to draw on a bird or a hare, his accustomed rings and dark background are not there. His vision is blurred, he draws waveringly and shoots indifferently. A black rubber ball four inches in diameter, suspended in mid-air by a string fastened to the low limb of an apple-tree, makes a first-rate substitute for a bird, and a small bag of straw, placed flat on the ground and shot at at about twenty-five yards, makes good hare practice. You will

soon learn the great advantage of not using the same distance all the time, as in the game of archery. For, after all, a bowman's skill is scarcely worthy of admiration if it is confined to a fixed range."

A few words about the strength of bows, and we have said enough for the purposes of a little handbook.

Bows are graduated by the number of pounds' weight required to bend them. Ladies' bows range from fourteen to thirty pounds pull, while gentlemen can take from forty to sixty pound bows. The heaviest bows should be used for hunting purposes, but for target practice at short range a bow under your strength is recommended, as it is easier to take aim with such a weapon than with one that tasks all your force merely to bend it.

THE END.

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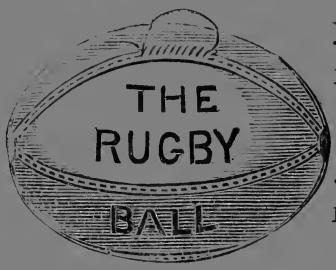

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